TA
705.3
L675.E5
1970

325

W. A. WAHLER
& ASSOCIATES

PALO ALTO NEWPORT BEACH

W. A. WAHLER & ASSOCIATES 1023 CORPORATION WAY, PALO ALTO, CALIFORNIA 94303 • (415) 968-6250 • TELEX 34-8321

October 27, 1970
Project 0546

Santa Clara County Flood Control
and Water District
516 East Martha Street
San Jose, California 95112

Attention: Mr. L.C. Fowler, Director of Engineering

Subject: Project No. 30020
Engineering Geology and Soil Engineering Investigation Report
Los Gatos Creek Channel
San Jose, California

Gentlemen:

We submit herewith six copies of our report entitled "Engineering Geology and Soil Engineering Investigation, Los Gatos Creek Channel, For Santa Clara County Flood Control and Water District". This work was performed in accordance with our Contract For Engineering Services authorized by the District's Board of Directors on September 8, 1970.

On the basis of our investigation, we are of the opinion that the site is suitable for the proposed development provided the recommendations presented herein are incorporated into the project design, plans, specifications and construction. We have had several meetings with your staff to discuss the project requirements and our preliminary results. Messrs. E. Furgeson and C.B. Wilson of your staff have been most helpful and their efforts greatly facilitated our work.

It has been our pleasure to work with you on this project and trust that this report is suited to your needs.

Very truly yours,

W.A. WAHLER & ASSOCIATES

James F. Riley

James F. Riley
Principal

JFR:FB:ry

Enclosure

REPORT
ENGINEERING GEOLOGY AND SOIL ENGINEERING INVESTIGATION

For
LOS GATOS CREEK CHANNEL
SAN JOSE, CALIFORNIA

To
SANTA CLARA COUNTY FLOOD CONTROL
AND WATER DISTRICT
516 East Martha Street
San Jose, California 95112

October 1970

SANTA CLARA VALLEY WATER DISTRICT
LIBRARY
[illegible] ALMADEN EXPRESSWAY
SAN JOSE, CALIFORNIA 95118

W.A. WAHLER
& ASSOCIATES

1023 Corporation Way, Palo Alto, California 94303

TABLE OF CONTENTS

Page No.

TITLE PAGE
TABLE OF CONTENTS i
INTRODUCTION 1
PURPOSE AND SCOPE 1
PROJECT DESCRIPTION 2
SITE CONDITIONS 2
SUBSURFACE CONDITIONS 3
STATION 0+00 TO STATION G3+00 4
STATION G3+00 TO STATION G7+49 5
STATION 3+00 TO STATION 8+50 5
STATION 8+50 TO STATION 39+65 6
PIEZOMETER INSTALLATION 6
CONCLUSIONS AND RECOMMENDATIONS 7
  Grading and Earthwork 7
  Rectangular Channel Design 8
    1. Lateral Earth Pressure 8
    2. Allowable Bearing Pressure 9
    3. Lateral Load Capacity 9
  Special Considerations 9
    1. Settlements 9
    2. Expansive Soils 9
LIMITATIONS 9
FIGURE 1 - SITE PLAN AND CROSS SECTION
FIGURE 2 - RECOMMENDED LATERAL EARTH PRESSURES

APPENDIX A - FIELD INVESTIGATION A-1
  Eleven Drill Hole Logs
  Key to Soil Exploration Logs
  Figure A-1 - Six Test Pit Logs
  Figure A-2 - Diagrammatic Test Pit Cross Sections

TABLE OF CONTENTS (Continued)

Page No.

APPENDIX B - LABORATORY INVESTIGATION B-1

TABLE A - Unit Weight B-2
Sand Equivalent
Unconfined Compression

Figure B-1 - Gradation

Figure B-2 - Compaction

Figure B-3 - Atterberg Limits

Figure B-4 - Direct Shear

Figure B-5 - Consolidation

REPORT
ENGINEERING GEOLOGY AND SOIL ENGINEERING INVESTIGATION
LOS GATOS CREEK CHANNEL
FOR SANTA CLARA COUNTY FLOOD CONTROL AND WATER DISTRICT

INTRODUCTION

This report presents our engineering geology and soil engineering conclusions and recommendations concerning the proposed rectangular concrete lined channel improvement of Los Gatos Creek from St. John Street to San Carlos Street, and some improvements for the reach of Guadalupe River from its confluence with Los Gatos Creek to Santa Clara Street in San Jose, California. These conclusions and recommendations are based upon the results of our investigation of the site materials reported in the enclosed Appendix A, "Field Investigation", and Appendix B, "Laboratory Investigation".

PURPOSE AND SCOPE

The purposes of this investigation were to determine the location and extent of the various materials present on the site and their significant physical and engineering properties with respect to the soil engineering requirements of the project. The scope of work covered by this report consisted of:

1. Map the soil profile along the existing bank as naturally exposed and as exposed by a backhoe under our direction.
2. Provide a log of borings for the project reach to sufficiently represent the soil profile. A subsurface investigation consisting of 11 borings extending from the top of existing bank to at least a depth of 15 feet below the future channel invert was performed.
3. Install well-type piezometers in three (3) of the borings.
4. Provide a soils profile based on the information from the log of borings and the mapping of the soil profile along the bank.
5. From the material to be excavated, determine its suitability for use as structural backfill as determined by the State of California Standard Specifications.
6. If the material from excavation was found to be suitable for structural backfill, determine the following parameters from samples representative

of the backfill material compacted to 90% of maximum dry density in accordance with ASTM Test Designation D 1557-66T.

  a. Unit Weight
  b. Void Ratio
  c. Water Content
  d. Specific Gravity

7. Determine the inplace density of the material from excavation in order to calculate the shrink and/or swell parameters for earthwork volume.
8. Provide gradation curves for the material from excavation to be used as structural backfill, suitable for filter design.
9. Determine the cohesion and the angle of internal friction for the material from excavation which will be used for backfill, sufficient to determine the lateral earth pressures for the "active" and the "at rest" conditions.
10. Provide other recommendations deemed necessary resulting from site conditions that would assist in the determination of earth forces on the proposed facilities.
11. Estimate the maximum safe cut slopes which would not require shoring for a 60 to 90 day construction period.
12. Provide an estimate of the settlement and expansion potential.
13. Provide an engineering report of the above findings.

PROJECT DESCRIPTION

We understand that the proposed improvements will principally consist of a rectangular reinforced concreted open channel approximately 20 feet in height and 50 feet in width. The vertical channel walls will be designed as cantilever or as counterfort walls.

In the course of our work, we have maintained contact with the Messrs. Ed Furgeson and Charles Bruce Wilson of your staff, who have been most helpful. Their prompt cooperation has greatly facilitated our work on this project.

SITE CONDITIONS

The subject site includes a 4,000 feet section of Los Gatos Creek from St. John Street on the north (downstream) to San Carlos Street on the south (upstream) and a reach of the Guadalupe River from its confluence with Los Gatos Creek south (upstream) to Santa Clara Street in San Jose, California.

The existing creek bank varies in height from 14 to 20 feet and averages 18 feet. Varied types of structures were noted along the creek bank and include concrete box culverts, concrete retaining walls, wooden piles, sacked concrete riprap, broken concrete riprap, and asphatic concrete and concrete linings. The linings restricted backhoe exploration work. Along several places, dumped debris containing concrete, wood, glass and paper was observed. (Please refer to Figure A-2.) Natural, inplace materials are rarely exposed except along the base of creek banks and along the open excavation for the box culvert currently under construction at Montgomery Street.

Creek bank slopes vary from vertical (retaining walls) to approximately 1½ horizontal to 1 vertical for asphaltic concrete or concrete lined banks. Vegetation consisting of water-loving plants and trees lined most of the creek bank. During this investigation, the creek bottom was dry from San Carlos Street north to Santa Clara Street. Creek water was observed on the north end of the project in both Los Gatos Creek and Guadalupe River from Santa Clara Street to St. John Street.

SUBSURFACE CONDITIONS

Backhoe excavation, examination of artificial cuts and outcrops and subsurface drilling indicate that there is considerable vertical and lateral variation in the soil profile for the entire stretch; depths and thicknesses of different soil zones vary considerably (see Figure 1).

The natural inplace material of the stream banks consists of older alluvium. The general soil profile for the entire stretch may be classified as follows (from top of bank to bottom of explored depth):

Zone I. Fill - consists of gravel, sand and clay with varying amounts of mixed concrete blocks, glass, asphalt and wood. Generally loose, thickness varies (2 to 14 feet), thicker towards creek.

Zone II. Upper Fine Grained Soil - silty clay to silty sand. Thickness varies from 0 to 12 feet.

Zone III. Upper Coarse Grained Soil - Interlayered sand and gravel lenses. Little to no fines. Yellowish brown, generally dense. This zone is approximately at the same elevation as the present stream channe but it is an older deposit. Varies in thickness from 3 to 12 feet.

Zone IV.	Lower Fine Grained Soil - Alternating layers of silty sand, silty clay and highly plastic dark gray, clay; firm to stiff in consistency, sometimes soft. Thickness varies from 9 to 25 feet.
Zone V.	Lower Coarse Grained Soil - Interlayered sand and gravel layers, dense. Thickness undetermined as the drill holes did not penetrate this zone.

The material on the bottom of the existing channel consists principally of a relatively clean sand gravel mixture with some cobbles. It is a recent stream alluvium composed of material being carried by the creek and material being eroded from the banks and has a variable thickness.

For report purposes, the project segment of Los Gatos Creek is divided into different sections of similar vertical and horizontal soil profile. The selection of these sections is based on our interpretation of drill hole and trench data and is therefore subject to variation.

STATION 0+00 TO STATION G3+00

This section starts from St. John Street south to the confluence of Los Gatos Creek and Guadalupe River. The soil profile is based on drill hole DH-3 and projections from drill hole DH-2.

DEPTHS (FT.)	MATERIAL TYPE
0 to 8	FILL; mixed gravel, sand clay with concrete blocks, nails, glass; firm to stiff in consistency. Thickness varies considerably but is typically thicker towards creek.
7 to 20	Near St. John Street; 9' to 13' near Station G3+00. UPPER FINE GRAINED SOIL - material varies from a brown gray firm to stiff silty clay to a sandy clay at St. John Street to loose clayey sand at Station G3+00.
20 to 23	At St. John Street; possibly 14' to 18' at Station G3+00. UPPER COARSE GRAINED SOIL - dense, gravelly sand layer appears to dip towards the south. Thickness averages 4 feet.
23 to 36	At St. John Street; possibly 18' to 30' at Station G3+00. LOWER FINE GRAINED SOIL - firm to stiff, moderately to highly plastic silty clay with some sandy clay layers.

DEPTHS (FT.)	MATERIAL TYPE
37 to 39	At St. John Street; possibly 30' to 40' feet at Station G3+00.
	LOWER COARSE GRAINED SOIL - sand dense, sandy gravel, very little fines.

STATION G3+00 TO STATION G7+49

This section begins from the confluence of Guadalupe River and Los Gatos Creek south to Santa Clara Street along the Guadalupe River. The soil profile is based on drill hole DH-1 data and projections from drill hole DH-2. The material expected along the southern half of this section appears to be generally fine grained down to the elevation of the existing channel bottom (17 to 18 feet from the top of the creek bank). (See DH-1 log.) The upper 10.5 feet, more or less, consists of mixed fill. This overlies about 8 feet of loose sand layer to a depth of 18.5 feet. From 18.5 feet to 38.5 feet (bottom of hole) the soil consists of alternating layers of firm to stiff silty clay, sandy clay and some thin sand layers.

The soil profile on the northern half (G3+00 to G5+00) will be the same except for the possible occurrence of gravelly sand layers at depths ranging from 15 to 20 feet.

STATION 3+00 TO STATION 8+50

This section of Los Gatos Creek begins at the confluence of Los Gatos Creek and Guadalupe River to San Fernando Street Bridge. The soil profile is based on data from DH-2 and DH-4. Fill consisting of mixed sand clay and gravel with some wood, concrete, and tin cans will be encountered from a few feet to 12.5 feet depth (DH-4) or more. Most of the fill material is generally not suitable for fill.

Underlying the fill is the Upper Fine Grained Soil (clayey sand to a possible silty clay) extending to depths of 13 feet. This in turn is underlain by the Upper Coarse Grained Soil of dense gravelly sand extending to depths ranging from 17.5 to 19 feet. Below the gravelly sand layer is an alternating sequence of loose to medium dense clayey sand and sand and moderately to highly plastic, silty clay of firm to stiff consistency. This Lower Fine Grained Soil extends to depths ranging from 33 to 39.7 feet. In the vicinity of DH-2, a Lower Coarse Grained Soil of dense sandy gravel is expected at depths beyond 33 feet.

STATION 8+50 TO STATION 39+65

This section comprises more than 3/4 of the entire project and extends from San Fernando Street south to San Carlos Street.

Projections of data from drill holes DH 7, 8, 9, 10 and 11 show that the top of the creek bank is either mixed fill or the Upper Fine Grained Soil consisting of alternating clay, silt and sand. The fill varies in thickness, and is generally loose and heterogeneous.

Next in occurrence is the Upper Coarse Grained Soil layer of dense gravelly sand varying in thickness from 5 feet at the south end of the project to 12.5 feet north at Station 25+00. The gravelly sand layer has an average depth ranging from 11 to 22 feet north of the Montgomery box culvert and 9 to 16 feet south of the box culvert.

A 20 feet high temporary cut at a slope of 1/2:1 to vertical, and about 100 feet long at the site of the Montgomery Street box culvert site shows the soil profile at that point may possibly represent the typical occurrence of coarse sand and gravel layers at this section. The upper 9 feet of the cut consists of fill and in-place silty clay and gravelly clay overlying coarse-grained material comprised of alternating and irregular 2 to 5 feet thick lenses of sandy ggravel and gravelly sand. A diagrammatic sketch of the soil profile exposed is presented in Figure 1.

Underlying the gravelly sand at depths ranging from 16 to 22 feet is the Lower Fine Grained Soil comprised of alternating firm to stiff moderately to highly plastic silty clay, sand and silt. This fine grained material extends to depths ranging from 31 to 41.5 feet.

A lower, dipping sandy gravel lens will possibly be expected at depths of 38 feet and 31 feet between DH-8 and DH-9.

PIEZOMETER INSTALLATION

Two permanent piezometers were installed in each of drill holes DH-2 and DH-8 at depths of about 19.7 and 39.5 feet, and 22.5 and 39.3 feet respectively. All other nine holes had one piezometer pipe extending to the bottom except DH-10 which had 2 pipes installed. Only the pipes installed in DH-1, 2, 3 and 4 on the north end of the project encountered water (water was ponded or flowing in this section of the creek). In DH-11 water was encountered at 27.5 feet and apparently reflects waste water impounded by an access road fill on the bottom of the creek. All water level readings were about 3 to 5 feet below the creek water level indicating an effluent flow condition or creek water contributing to the groundwater. The apparent permeability of the sand and gravel layers and the seasonal fluctuation of groundwater in response to precipitation indicates the possibility of water rising above the present creek bottom. This, of course, will be verified by piezometer readings in the next 9 months.

CONCLUSIONS AND RECOMMENDATIONS

It is our opinion that the site is suitable for the proposed development provided that the recommendations presented herein are incorporated into the project design, plans, specifications, and construction.

Grading and Earthwork - Considerable site grading and earthwork will be required for the construction of the planned rectangular channel improvements.

As a majority of the required fill and structural backfill will probably be derived from on-site grading operations, caution should be exercised to prevent mixing of the coarse grained and fine grained soils. Prior to site earthwork operations, the debris fill, all existing channel lining and other deleterious material should be stripped and hauled off-site. Depressions and ruts created by the removal of grading obstructions should be properly backfilled with suitable fill materials and compacted to a minimum of 90 percent relative compaction as determined by California Test Method No. 216. The upper 6 inches of subgrade exposed by stripping or excavation should be scarified, moisture conditioned and properly compacted to at least 90 percent relative compaction prior to fill placement.

In general terms, the material from Zones III and V will be suitable for structural backfill to be placed adjacent to the vertical channel walls. The material from Zones II and IV will be suitable for fill which will not be placed adjacent to the channel walls. If care is exercised during grading, the materials can be segregated for their respective uses. However, it may be economically more feasible to not segregate materials and import needed structural backfill. All structural backfill should be compacted to not less than 95% relative compaction and all other fill should be compacted to not less than 90% relative compaction in accordance with California Test Method No. 216.

Excavation of on-site materials should be readily accomplished with standard earth-moving and trenching equipment. The walls of temporary (construction) trenches in the upper fine grained stratum should stand nearly vertical provided they do not exceed 5 feet in depth, and if heavy equipment is not allowed closer to the trench edge than the depth of the trench. The walls of temporary construction trenches which extend into the sand gravel stratum will be prone to sloughing. Shoring of trench walls or flattening of slopes may be required if deeper trenches are necessary or if the presence of gravel pockets, loose dry sand, et cetera, cause severe localized ravelling or instability. All work associated with trench shoring must conform to the State of California Safety Code. Native soils may be utilized for trench backfill, provided the organic content does not exceed 3 percent. Trench backfill should be mechanically compacted to not less than 90 percent relative compaction. Jetting of backfill in trenches should not be allowed.

Positive surface gradients should be provided adjacent to all structures, so as to direct surface water runoff away from foundation and slab and toward suitable discharge facilities. Ponding of surface water should not be allowed adjacent to any structures.

Rectangular Channel Design - Based upon our inspection of the site and our interpretation of the results of the laboratory tests and field data, the following recommendations are provided as a guide to design. No warranty is made or implied in this report that this firm has an all-inclusive knowledge of every portion of the subsurface materials on or under this site; however, it is our opinion that if the recommendations of this report are followed and if any unexpected conditions discovered during the course of construction are made known to us for supplemental investigation and recommendations, then the supporting soil materials should perform as anticipated and be able to support the foundation loads recommended below.

1. Lateral Earth Pressure - During our meetings with your staff, we were advised that a permeable blanket would be placed behind the channel walls and weep holes provided to preclude buildup of hydrostatic pressure behind the channel walls and under the channel bottom. On this basis, we recommend that the channel walls be designed for the lateral earth pressures presented in Figure 2 of this report. These lateral earth pressure recommendations do not include the effect of any surcharge or concentrated loading behind the channel walls and where such

additional loads are imposed, their effect should be superimposed on the lateral earth pressures presented in Figure 2.

The use of excessively heavy mechanical compactors immediately adjacent to the channel walls should not be permitted, unless provisions are made in the structural design to allow it. Some manual means, or the use of small compactors will be required for compacting the structural backfill adjacent to the channel walls.

2. Allowable Bearing Pressure - For the planned invert Elevations, nearly all of the channel footings will be founded in the Zone IV materials. For this reason, we recommend that the footings should be proportioned to limit their soil bearing pressure to 2,000 pounds per square foot.

3. Lateral Load Capacity - For shallow spread footings, lateral loads will be resisted by friction between the bottom of the footings and the soil, and by passive earth pressure on the sides of the footings. A friction factor of 0.3 is applicable, and a passive earth pressure of 250 pounds per square foot of penetration should be used provided the base of the footing is poured neat against the soil (unformed); if the base is formed, passive resistance should be neglected. If additional lateral load capacity is required, a shear key on the bottom of the footing would mobilize additional passive earth pressure of 250 pounds per square foot per foot of penetration if poured neat.

Special Considerations

1. Settlements - For vertical channel walls and footings designed in accordance with the foregoing recommendations, it is our opinion that total settlements will range between 1/2 and 1 1/2 inches.

2. Expansive Soils - Laboratory tests on select samples indicate that some of the Zone II materials possess medium expansivity potential and that some of the Zone IV materials have high expansivity potential, as determined by the Seed, Woodward and Lundgren method. For this reason, Zone II and Zone IV materials should not be placed adjacent to the channel walls. Where exposed along the proposed channel bottom, all surface cracks should be closed by soaking to minimize volume changes after concrete is placed.

LIMITATIONS

Soil deposits may vary in type, strength and many other important properties between borings, trenches and other points of examination. The conclusions, and recommendations contained in this report are based partially on the data available to us and our interpretations of that data based on our experience and background. These conclusions and recommendations are professional opinions prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

To a degree, the performance of any structure is dependent upon construction procedures and quality. Hence, care should be taken during construction to ensure that the recommendations presented in this report are followed. This office should be notified of any subsurface conditions different from those forming the basis of our recommendations.

Respectfully Submitted,

W.A. WAHLER & ASSOCIATES

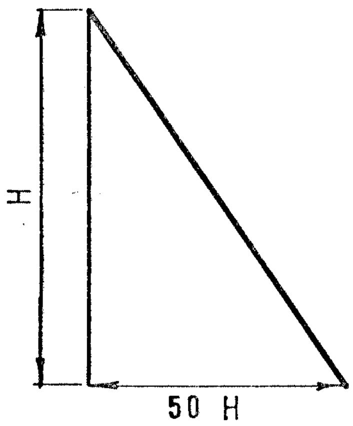
Frank Berlogar

Frank Berlogar
Project Engineer

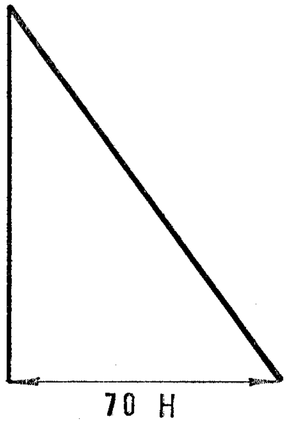
James Riley

James F. Riley
Principal, RCE 9895

ACTIVE CASE

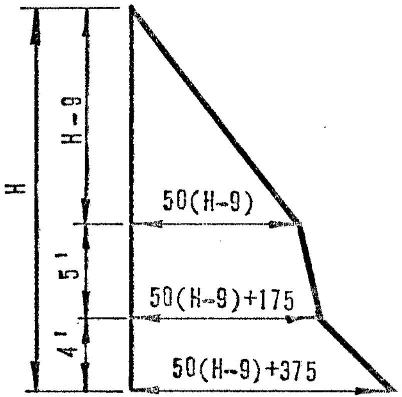


AT REST CASE

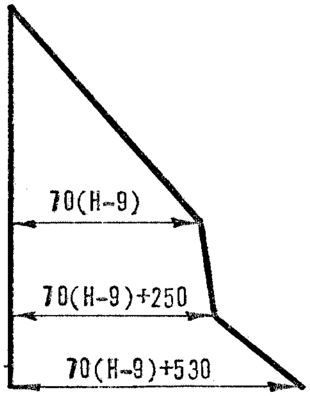


STATIONS 0+00 TO 3+00
G0+00 TO G3+00

ACTIVE CASE

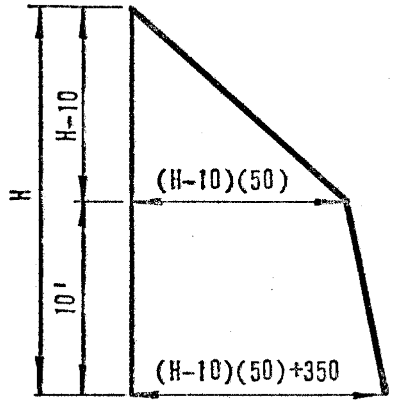


AT REST CASE

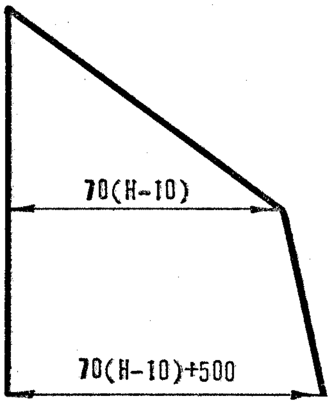


STATIONS 3+00 TO 21+00
G3+00 TO G7+50

ACTIVE CASE



AT REST CASE



STATIONS 21+00 TO 39+65

NOTE: THESE PRESSURE RECOMMENDATIONS ASSUME THAT HEAVY EQUIPMENT IS NOT PERMITTED TO COMPACT BACKFILL ADJACENT TO THE WALL AND NO SURCHARGE LOADING ABOVE THE TOP OF WALL; ALSO, THAT THERE IS NO HYDROSTATIC BUILDUP BEHIND THE WALL.

W. A. WAHLER
& ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

RECOMMENDED LATERAL EARTH PRESSURES

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	FIGURE 2

APPENDIX A

FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a detailed subsurface exploration program. A total of 11 drill holes were drilled between September 17 and September 24, 1970. A total of 6 backhoe test pits were excavated on the existing channel sides in the lagoon area to depths of up to 4 feet on September 15, 1970. The Drill Holes were advanced with truck-mounted and rubber tired tractor continuous flight auger drill rigs.

The soils encountered were logged continuously by our engineering geologist in the field during the exploration and were described in accordance with the Unified Soil Classification System described on the explanatory sheet accompanying the logs which are included in this appendix.

Soil samples were obtained from the exploratory drill holes at selected depths. Disturbed soils obtained from sampling or drilling were placed in bags. Relatively undisturbed samples were recovered by pushing thin-wall Shelby tubes. All samples were transmitted to our Palo Alto laboratory for further evaluation and testing.

Standard Penetration Resistance below counts were obtained by dropping a 140 pound weight having a 30-inch free fall. The standard penetration split spoon (2-inch O.D., 1-3/8 inch I.D.) sampler was driven 18 inches and the number of blows was noted for each 6 inches of penetration. The blows for each 6 inch interval is recorded on the drill hole logs.

DRILL RIG	HELICAL AUGER	HOLE ELEVATION	81.8	LOGGED BY	ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE)	17.3 (9/18/70)	HOLE DIAMETER	4"	DATE DRILLED	9/18/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
(0)	FILL	0-10.5 FILL; mixed debris: concrete, rocks, and some sandy soil; some wood fragments.		AD	
80 (2)					
78 (4)					
		Concrete block at 5'	J-1	DR 24	17/.5, 15/.5, 9/.5
76 (6)		Rocky at 6 to 8'.		AD	
		Gravelly clay; dark brown; glass and brick fragments.			
74 (8)					
72 (10)			J-2 1.0/1.5	DR 10	5/.5, 5/.5, 5/.5
	SP	10.5-18.5 SAND; little fines; moderate yellow brown mottled w/gray and moderate brown; fine to medium grained; loose; damp.		RD	
70 (12)					
68 (14)			S-1 1.2/1.5	P	
66 (16)			B-1 1.5/1.5	DR 5	3/.5, 3/.5, 2/.5
				AP	
64 (18)			S-2 1.5/1.5	P	
	CL	18.5-20.0 CLAY; sandy; gray mottled w/brown gray; some roots; firm; wet.			
62 (20)				DR	

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 OF 2	DH-1

DRILL RIG HELICAL AUGER	HOLE ELEVATION 81.8	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) 17.3 (9/18/70)	HOLE DIAMETER 4"	DATE DRILLED 9/18/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
62 (20)	CL-CH	Grades to 20.0-20.8 CLAY; silty; dark blue gray; moderate to high plasticity; firm.	B-2 1.5/1.5	DR	6	2/.5, 4/.5
60 (22)	SC	20.8-23.0 SAND; some clay; yellow brown mottled w/ moderate brown. Grades to		AD		
58 (24)	CL	23.0-25.0 CLAY; sandy; gray; moderately plastic fines; firm.	Lost Smpl; too much water	P		
56 (26)	CL-CH	25.0-35.5 CLAY; silty; blue gray; moderate to high plasticity; firm to stiff.		AD		
			S-3 0.4/1.5	P		
54 (28)		Grades to Varying amounts of sand	B-3 1.5/1.5	DR	8	3/.5, 4/.5, 4/.5
52 (30)				AD		
50 (32)		Increasing sand content				
48 (34)		Grades to	S-4 1.5/1.5	P		
46 (36)	SP	35.5-36.0 SAND				
	CL	36.0-38.5 CLAY; silty; yellow brown to light brown; moderate plasticity;stiff. Grades to sandy.	B-4 1.0/1.5	DR	9	4/.5, 4/.5, 5/.5
44 (38)			B-5 1.0/1.5	DR	19	4/.5, 9/.5, 10/.5
		BOTTOM OF HOLE = 38.5 FEET				
42 (40)						

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

∇ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO.	DATE	SHEET NO.	
		0546	OCTOBER 1970	2 OF 2	D-1

DRILL RIG HELICAL AUGER	HOLE ELEVATION 80.3	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/24/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
80 (0)	FILL	0-9.0 MIXED FILL; gravelly, sandy clay w/concrete and brick fragments and nails; dark brown				
78 (2)				AD		
76 (4)						
74 (6)			J-1 0.7/1.5	DR	9	4/.5, 4/.5, 5/.5
72 (8)				AD		
70 (10)	SC	9.0-13.0 SAND; slightly clayey; medium grained; moderately reddish brown to brown gray; loose; dry.	B-1 1.5/1.5	DR	7	3/.5, 2/.5, 5/.5
68 (12)				AD		
66 (14)	SP-GP	13.0-17.5 SAND; gravelly; very little fines; mostly hard, rounded, fine gravel and coarse sand; very dense; damp.	B-2 1.5/1.5	DR	64	6/.5, 30/.5, 34/.5
64 (16)				AD		
62 (18)	CL	17.5-18.5 CLAY; silty; lens; brown gray to yellow brown; moderate plasticity; moist.	S-1 1.0/1.5	P		
	SC (CL)	18.5-26.0 SAND; clayey (see Sheet 2)		DR		6/.5
60 (20)						

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 of 3	DH-2

DRILL RIG HELICAL AUGER	HOLE ELEVATION 80.3	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/24/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
60 (20)	SC (CL)	SAND--CONTINUED Alternating w/sand-clay; brownish gray to gray; firm to stiff; wet.	B-3	DR	21	9/.5, 12/.5
58 (22)				AD		
56 (24)						
		Sandy clay along inner sides to tube; grades to		P		
54 (26)	CL- CH	26.0-33.0 CLAY; silty; yellow brown mottled w/brown gray; moderate to highly plastic; stiff.		AD		
			S-2 0.9/1.5	P		
52 (28)						
			B-4 1.0/1.5	DR	9	4/.5, 5/.5, 4/.5
50 (30)				AD		
48 (32)						
	GP	33.0-39.5 GRAVEL; sandy; very little binder; hard, fine, subrounded gravel and coarse sand; very dense.				
46 (34)			J-2 .5/.5	DR		
44 (36)				AD		
42 (38)						
			B-5	DR	29	20/.5, 9/.5, 6/.5
40 (40)	CL	39.5-40.5 CLAY; sandy (Sh.3)				

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 2 OF 3	HOLE NO. DH-2

DRILL RIG HELICAL AUGER	HOLE ELEVATION 80.3	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/24/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
40 (40)	CL	CLAY--CONTINUED Moderate yellow brown to brown gray; stiff; dense.		DR 15	THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES. THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES. ▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION. THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.
38 (42)		TERMINATED HOLE @ 40.5 FEET			
36 (44)					
34 (46)					

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO.	DATE	SHEET NO.	
		0546	OCTOBER 1970	3 OF 3	DH-2

DRILL RIG HELICAL AUGER	HOLE ELEVATION 79.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) 22.5' (After drilling)	HOLE DIAMETER 4"	DATE DRILLED 9/23/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
(0)	CL	0-8.0 CLAY; gravelly; sandy; some concrete blocks and rocks.		AD	
78 (2) 76					
(4)		Grades to			
74 (6)		Silty clay; dark brown; slightly damp; moderate plasticity; stiff; slightly damp (appears to be FILL).	B-1 1.0/1.5	DR 16	4/.5, 7/.5, 9/.5
72				AD	
(8) 70	CL	8.0-16.0 CLAY; silty; brown-gray mottled w/yellow brown; moderate plasticity; stiff; color change to dark gray-brown at 9.5 to 12.5'.			
(10) 68			S-1 1.2/1.5	P	
(12)		Slightly sandy at 12.5-13.0'	B-2 1.2/1.5	DR 15	9/.5, 6/.5, 9/.5
66 (14)		Grades to more sand and yellow brown color at 14'; firm.		AD	
64 (16)			B-3 1/5/1.5	DR 8	2/.5, 4/.5, 4/.5
(16) 62 (18) 60 (20)	CL (SP)	16.0-20.0 CLAY;sandy alternating w/SAND; moderate yellow brown; low to moderate plasticity; firm; damp.			

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 1 OF 2	DH-3

DRILL RIG HELICAL AUGER	HOLE ELEVATION 79.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) 22.5' (After drilling)	HOLE DIAMETER 4"	DATE DRILLED 9/23/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(20)	GP	20.0-23.0 GRAVEL; sandy; fine; hard; subrounded gravel and sand; very little fines; very dense; wet.	S-2 .5/.5	P		Refusal
58			B-4 1.0/1.0	DR	51	23/.5, 28/.5
(22)				AD		
56	CL	23.0-27.5 CLAY; sandy; alternating w/SAND, clayey; mottled brown and gray; low to moderate plastic fines; wet; firm.				
(24)						
54			S-3 1.5/1.5	P		
(26)						
52		Grades to	B-5 1.5/1.5	DR	6	3/.5, 3/.5, 3/.5
(28)	CL	27.5-37.0 CLAY; silty w/fine sand; yellow brown; moderately plastic; stiff; moist.				
50				AD		
(30)						
48						
(32)			B-6 1.5/1.5	DR	8	4/.5, 4/.5, 4/.5
46						
(34)				AD		
44						
(36)						
42	GP	37.2-38.8 GRAVEL; sandy; no clay binder; dense; wet.				
(38)		38.8-39.5 CLAY; silty;moderate brown to gray and yellow brown; moderate plasticity; STIFF; damp.	J-1;38-39' J-2;39-39.5 1.5/1.5	DR	12	6/.5, 6/.5, 6/.5
40	CL					
(40)		TERMINATED HOLE @ 40.5 FEET				

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 2 OF 2	DH-3

DRILL RIG HELICAL AUGER	HOLE ELEVATION 81.9	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/21/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(0)	FILL	0-12.5 FILL; mixed debris: rock, concrete, tin cans, wood, gravel, soil.		AD		Difficult augering; placed drilling mud to stabilize hole.
80 (2)						
78 (4)						
76 (6)		Concrete chunk at 6'				
74 (8)		GRAVEL, clayey; moderate brown to moderate yellow brown (FILL)				
72 (10)			J-1 0.8/1.5	DR	19	8/.5, 8/.5, 11/.5
				AD		
70 (12)						
	SP-GP	12.5-19.0 SAND; gravelly to sandy GRAVEL; rounded; fine, hard w/medium grained sand; moderate brown to moderate yellow brown; no binder; dense.	J-2 0.8/1.5	DR	16	7/.5, 8/.5, 8/.5
68 (14)			B-1 1.0/1.5	DR	13	11/.5, 6/.5, 7/.5
66 (16)						
64 (18)		Grades to more clay; gray color; moist.		AD		
62 (20)	SP (SC)	19.0-29.0 SAND; fine (see Sheet 2.	S-1 1.0/1.5	P		

W.A. WAHLER & ASSOCIATES

PALO ALTO • NEWPORT BEACH • CALIF.

LOS GATOS CREEK CHANNEL

SOIL EXPLORATION

DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 OF 2	DH-4

DRILL RIG HELICAL AUGER	HOLE ELEVATION 81.9	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/21/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
62 (20)	SP (SC)	SAND--CONTINUED Medium grained; very little fines; dark gray; wet; some thin gravel layers at 22'.		P		
			B-2 1.4/1.5	DR	9	10/.5, 5/.5, 4/.5
60 (22)						
		Grades to Alternating layer of clayey sand, gravel-sand, and sand w/little fines.		AD		
58 (24)			Lost Sample	P		
56 (26)				AD		
54 (28)			J-3;29-29.5 B-3;28-29'	DR	7	5/.5, 4/.5, 3/.5
	CL-CH	29.0-37.0 CLAY; silty; dark gray; moderate to high plasticity; firm.				
52 (30)				AD		
50 (32)						
		Sample on inner sides of tube gray and yellow brown, silty clay. (Same as DH-1)	Lost Sample	P		
48 (34)				AD		
46 (36)						
	SP (SC)	37.0-39.7 SAND; slightly clayey; moderate yellow brown; some gravel; dense.	S-2	P		
44 (38)				DR	37	10/.5, 17/.5, 20/.5
42 (40)		TERMINATED HOLE @ 38.7 FEET				

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 2 OF 2	DH-4

DRILL RIG HELICAL AUGER	HOLE ELEVATION 85.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/21/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(0) 84 (2) 82 (4) 80 (6) 78	FILL	0-8.0 MIXED FILL; gravel, concrete blocks, soil. Concrete block at 7'.		AD		Started 4 holes; too much cavein in loose debris fill; 4th hole drilled using some drilling mud to pack sides of hole.
(8)	FILL	8.0-9.5 FILL; sandy; dark brown; moderate plasticity Grades to				
76 (10)	SP	9.5-12.5 SAND; fine to medium grained; moderate yellow brown; loose.	J-1;9-9.5 1.1/1.5 B-1;9.5-10.5.	DR	5	3/.5, 2/.5, 3/.5
				AD		
74 (12)			S-1	P		
72 (14)	SP-GP	12.5-16.5 SAND; gravelly; little binder; hard, rounded, fine gravel w/fine to medium sand; damp.	B-2 1.2/1.4	DR	9	7/.5, 4/.5, 5/.5
70 (16)				AD		
	SP	16.5-17.5 SAND; fine to medium grained.	S-2 0.6/0.6	P		
68			S-3 0.8/1.0	P		
(18)	CL	17.5-19.0 CLAY; silty;some fine sand; brownish gray mottled w/yellow brown;low to moderate plasticity;very stiff, grades to	B-3 1.5/1.5	DR	23	7/.5, 9/.5, 14/.5
66 (20)	ML-CL	19.0-38.5 SILT; clayey to CLAY, silty (see Sheet 2)				

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 1 OF 3	DH-5

DRILL RIG HELICAL AUGER	HOLE ELEVATION 85.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/21/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(20)	ML-CL	SILT--CONTINUED Varying amounts of fine sand; yellow brown mottled w/brownish gray and yellow orange; low plasticity; very stiff; damp.		AD		
64						
(22)						
62						
(24)			B-4 1.0/1.5	DR	19	9/.5, 8/.5, 11/.5
60						
(26)				AD		
58						
(28)			S-4 1.5/1.5	P		
56			B-5 1.5/1.5	DR	17	6/.5, 8/.5, 9/.5
(30)						
54				AD		
(32)		Grades to more sand				
52						
(34)			B-6 1.5/1.5	DR	15	6/.5, 7/.5, 8/.5
50						
(36)						
48				AD		
(38)						
46	SP-GP	38.5-44.0 SAND; clean grading to SAND, gravelly; clean; medium dense.	J-2;38.5-39.0 1.0/1.5 B-7;39-40'	DR	21	2/.5, 9/.5, 12/.5
(40)						

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	2 OF 3	DH-5

DRILL RIG HELICAL AUGER	HOLE ELEVATION 85.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/21/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
(40)	SP-GP	SAND--CONTINUED Gravelly.			
44					
(42)					
42					
(44)		TERMINATED HOLE @ 44 FEET			

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AN DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMAL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DAT INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING O THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO.	DATE	SHEET NO.	
		0546	OCTOBER 1970	3 OF 3	DH-5

DRILL RIG HELICAL AUGER	HOLE ELEVATION 89.7	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/22-9/23/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(0)	FILL	0-14.0 FILL; Mixed debris fill; covered blocks, rocks, gravelly clay.		AD		Difficult drilling because of roots.
88						
(2)						
86						
(4)						
84						
(6)						
82						
(8)		CLAY; gravelly; sandy; dark brown; pieces of glass and iron.				
80						
(10)			J-1 1.2/1.5	DR	7	5/.5, 3/.5, 4/.5
78						
(12)		Rocky fill at 12'; glass fragments.				
76						
(14)	GP	14.0-18.0 GRAVEL; sandy; little fines; moderate yellow brown; hard, subrounded; gravel and medium sand; very dense; damp.		AD		
74			B-1 1.0/1.5	DR	57	23/.5, 28/.5, 29/.5
(16)						
72				AD		
(18)	CL	18.0-22.0 CLAY; sandy; mottled gray and yellow brown; moderate plasticity; damp; firm to stiff.				
70						
(20)						

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 OF 3	DH-6

DRILL RIG HELICAL AUGER	HOLE ELEVATION 89.7	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/22-9/23/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(20)	CL	CLAY--CONTINUED	B-2 1.5/1.5	DR	13	5/.5, 5/.5, 8/.5
68						
(22)				AD		
	SP	22.0-25.5 SAND; slightly clayey; medium grained; yellow brown; damp.				
66			S-1 1.3/1.5	P		
(24)						
		Grades to	B-3 1.0/1.5	DR	23	16/.5, 15/.5, 8/.5
64						
(26)	SC	25.5-27.5 SAND; clayey; very moist; moderate yellow brown.		AD		
		Grades to				
62			S-2 1.3/1.5	P		
(28)	CL	25.5-41.0 CLAY; silty; mottled brown gray and yellow orange; moderate plasticity damp; stiff.	B-4 1.2/1.5	DR	14	5/.5, 7/.5, 7/.5
60						
(30)		Slightly sandy at 29'		AD		
58		Grades to				
(32)		Sandier and moderate yellow brown color at 32'. Gray at 33'; grades to yellow brown at 35' and firm; moist.				
56						
(34)			B-5 1.5/1.5	DR	7	2/.5, 3/.5, 4/.5
54						
(36)		Grades to sandier at 36' to 40'.		AD		
52						
(38)			S-3 1.5/1.5	P		
50						
(40)			B-6	DR		

W.A. WAHLER & ASSOCIATES

PALO ALTO • NEWPORT BEACH • CALIF.

LOS GATOS CREEK CHANNEL

SOIL EXPLORATION DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	2 OF 3	DH-6

DRILL RIG HELICAL AUGER	HOLE ELEVATION 89.7	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/22-9/23/70

ELEVATION (Depth)	CLASS.		DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
(40)		CL		B-6 1.5/1.5	DR	11	4/.5, 5/.5, 6/.5
48 (42)			TERMINATED HOLE @ 41.0 FEET				

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BE CAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AN DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMAL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CON DITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DAT INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CON DITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING O THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG		HOLE NO.
	PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 3 OF 3	DH-6

DRILL RIG HELICAL AUGER	HOLE ELEVATION 89.1	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) 17.3 (9/22/70)	HOLE DIAMETER 4"	DATE DRILLED (9/22/70)

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
(0)	FILL	FILL; mixed debris, concrete blocks, rocks and soil moderate brown; relatively loose.			
88					
(2)					
86					
(4)					
84		CLAY; gravelly; sandy; moderate brown, mottled yellow brown.	J-1 1.5/1.5	DR	5/.5,5/15, 7/.5
(6)					
82				AD	
(8)					
80					
(10)	SP	10.5-12.0 SAND; medium grained; very little fines yellow brown to yellow oranges. Grades to medium dense.	B-1 1.0/1.5	DR 11	3/.5, 5/.5, 6/.5
78					
(12)			B-2	AD	
76	SP-GP	SAND; gravelly;very little fines; damp; gravel consists of hard subrounded °1/4 to 1" size; medium dense.	B-3 1.3/1.5	DR 26	20/.5, 15/.5, 11/.5
(14)					
74					
(16)					
72					
(18)	GP	18.0-24.0'- GRAVEL;sandy, slightly clayey; moderate brown to moderateyellow brown; damp; dense	B-4 1.0/1.5	DR 69	12/.5, 34/.5, 25/.5
70					
(20)					

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 1 OF 2	HOLE NO. DH-7

DRILL RIG HELICAL AUGER	HOLE ELEVATION 89.1	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) Not encountered	HOLE DIAMETER 4"	DATE DRILLED 9/22/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
68 (22) 66	GP	GRAVEL; sandy; clayey; dense.			
(24) 64 (26) 62	CL CH	24.0-34.5 CLAY;silty;dark gray; gray; mottled w/yellow bro beown; moderate to high plasticity; moist.	S-2 2.0/s.5	P	
(28) 60		Increasingly sandy at depth.	B-5 12	DR	3/.5, 6/.5, 6/.5
(30) 58 (32) 56 (34)				AD	
			J-2	DR	
54	SP	34.5-35.0' SAND; clean; wet; medium dense.	J-3 1.3/1.5	18	8/.5, 9/.5, 9/.5
(36) 52	CL	35.0-38.0' CLAY; silty; brown gray to yellow brown; stiff; moist; grades to:			
(38) 50 (40)	SC	38.0-40.0' SAND; clayey;gray; mottled w/yellowish brown; dense; moist. Terminated Hole - 40.0'			

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG		HOLE NO.
		PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 2 OF 3
				DH-7

DRILL RIG HELICAL AUGER	HOLE ELEVATION 89.7	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) Not encountered 9/23/70	HOLE DIAMETER 4"	DATE DRILLED 9/23/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
88 (2)		0-3.5' FILL; mixed debris consisting of concrete; rocks; sand and clay		AD		
86 (4)	ML	3.5-6.5' SILT; sandy, yellow brown; loose; low plasticity; clayey at 5 to 7' and stiffer.	No sample recovered	DR	5	1/.5, 2/.5, 3/.5
84 (6)		Grades to:		AD		
82 (8)	SM	6.5-8.5' SAND; silty; slighty clayey; yellow brown mottled w/gray; dense;	J-1 1.8/1.0	P		
		Grades to:	B-1 1.3/1.5	DR	32	15/.5, 16/.5, 16/.5
80 (10)	GP	8.5-21.0' GRAVEL; sandy; hard subrounded 1/2" to 2" gravel; very little fines; medium to coarse sand; gray brown mottled w/ yellow brown; dense				
78 (12)						
76 (14)						
74 (16)			B-2 1.2/1.5	DR	41.	12/.5, 20/.5, 21/.5
72 (18)						
70 (20)						

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 1 OF 2	HOLE NO. DH-8

DRILL RIG	HELICAL AUGER	HOLE ELEVATION	89.7	LOGGED BY	
GROUNDWATER DEPTH (BELOW GROUND SURFACE)	Not encountered	HOLE DIAMETER	4"	DATE DRILLED	9/23/70

ELEVATION	(Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
		GP	Grades to		AD	
		SC	21.0-23.0' SAND: clayey;			
68						
	(22)	CL	23.0-30.0' CLAY; silty; dark gray; mottled w/yellow brown; moderate to high plasticity; firm; damp.	S-2 1.0/1.5	P	
66	(24)	CH				
64	(26)			B-3 1.5/1.5	DR 8	3/.5, 3/.5, 5/.5
					AD	
62	(28)		Grades sandier at 28 to 30'			
60	(30)					
				S-3 1.5/1.5		
58		CL	30.0-38.0' CLAY; sandy; brownish gray; increasing sand content at depth; damp; stiff.	B-4 1.5/1.5	DR 10	3/.5, 4/.5, 6/.5
	(32)					
56						
	(34)					
54			Grades to		AD	
	(36)					
		CL	CLAY; sandy; yellowish brown; low plasticity.			
52	(38)					
		SP GP	38-40.0' SAND; gravelly; very dense; moist	B-5 1.5/1.5	DR 40	'12/.5, 18/.5, 22/.5
50	(40)		Terminated hole -40.0'			

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY B CAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AN DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMAL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CO DITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DAT INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CON DITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING O THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
	PALO ALTO • NEWPORT BEACH • CALIF.	PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 2 OF 2	DH-8

DRILL RIG HEILCAL AUGER	HOLE ELEVATION 93.5	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) Not encountered	HOLE DIAMETER 4"	DATE DRILLED 9/22/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
		0.0-6.0' FILL; clay; sandy gravelly; moderate brown.			
92	FILL				
(2)				AD	
90					
(4)					
88			J-1 6.65	DR 14	6/.5, 6/.5, 8/.5
(6)	CL	6.0-10.5' CLAY; sandy; silty; mottled yellow brown and light gray; low plasticity; stiff; increasing fine gravel and sand content at depth.			
86					
(8)					
84		Grades to			
(10)					
	GP	10.5-22.0' GRAVEL; sandy; fine hard rounded gravel and medium sand; yellow brown mottled w/gray and moderate brown; medium dense.	B-1 1.2/1.5	DR 32	11/.5, 17/.5, 15/.5
82					
(12)				AD	
80					
(14)		Grades to			
78			B-2 1.5/1.5	DR 23	10/.5, 13/.5, 11/.5
(16)					
76		Increasingly more clay and damp at 15'		AD	
(18)					
74					
(20)					

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 OF 2	DH-9

DRILL RIG HELICAL AUGER	HOLE ELEVATION 93.5	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) Not encountered	HOLE DIAMETER 4"	DATE DRILLED 9/22/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
72 (22)	GP		S-1 .7/.9	P	
70 (24)	CL	22.0-29.0' CLAY; silty; slightly sandy; mottled brown gray and moderate brown low to moderate plasticity soft to firm; moist.			
68 (26)			B-3 1.5/1.5	DR 6	2/.5, 3/.5, 3/.5
66 (28)				AD	
			S-2 2.5/2.5	P	
64 (30)	SP	29.0-31.0' SAND; little fines, medium-grained gray mottle w/yellow brown; ~~grades~~ Grades to			
62 (32) 60 (34)	SP GP	31.0-40.0' SAND; gravelly; very little fines; medium grained sand; yellow brown mottled w/gray; increasing gravel content and increasingly dense at depth		AD	
58 (36)			B-4 .8/1.0	DR	13/.5, 40/.5
56 (38)				AD	
54 (40)		Terminated hole 40.0"			

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 2 OF 2	HOLE NO. DH-9

DRILL RIG	HELICAL AUGER	HOLE ELEVATION	95.4	LOGGED BY	ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE)	Not encountered	HOLE DIAMETER	4"	DATE DRILLED	9/18/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
	FILL	0.0-8.0' FILL; mixed debris; concrete; asphalt; gravel and clay; damp.		AD	
94 (2)					
92 (4)		ASPHALT; mixed with soil	J-1 1.5/1.5	DR	6/.5, 6/.5, 7/.5
90 (6)		Gravel mixed with asphalt some culvert pipe fragments.		AD	
88 (8)					
86 (10)	SP	8.0-11.0' SAND; medium grained; little fines; moderate yellow brown; mottled w/yellow orange; damp; some fine rounded gravel.	S-1 1.5/1.5	P	
84 (12)	GP	11.0-15.5' GRAVEL; sandy; moderate yellow brown; little fines; 1/2 to 1" hard rounded gravel.	J-2 1.3/1.5	DR 10	5/.5, 6/.5, 4/.5
82 (14)		Grades clayey at 13.5 to 14'		AD	
			S-2 .9/1.2	P	
80 (16)			B-1 .8/10	DR 9	10/.5, 4/.5, 5/.5
	SP	15.5-17.0 SAND; medium grained; medium yellow brown; same as S-1; Grades to		AD	
76 (18)	SC ML	17.0-19.5 SAND; clayey alternating with silt, clayey. Grades to			
74 (20)	CL	19.5'-23.0' CLAY; silty; moderate yellow brown.	B-2 1.5/1.5	DR 10	4/.5, 4/.5, 6/.5

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 OF 3	DH-10

DRILL RIG HELICAL AUGER	HOLE ELEVATION 95.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/18/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
72 (22)	CL	CLAY; silty; moderate yellow brown, mottled with moderate brown and brown gray; firm moderate plasticity; moist increasingly sandy at depth grades to		DR AD	
70 (24)	SP	23.0-28.0' SAND; little fines medium grained; moderate yellow brown to brown gray; damp; alternating with silt; clayey.	S-3 1.2/1.2	P	
68 (26)		Wet at 26'. Grades to	B-3	DR 24	13/.5 12/;5 12/.5
66 (28) 64 (30)	CL	28.0-32.0' CLAY, sandy; yellow brown to moderate brown, moderate plasticity, firm to stiff. Increasingly sandy at depth		AD	
62 (32)	GP	GRAVEL, sand; lens	S-4	P	
60 (34)	SP	32.5-38.0' SAND; medium grained; moderate red brown to moderate brown; little fines medium dense; moist; increasingly clayey and silty.	B-4	DR 23 AD	10/.5 11/.5 12/.5
58 (36)	SC	SAND, clay lens			
	SP				
56 (38) 54 (40)	CL	38.0-41.7' CLAY; silty; sligh sandy; moderate yellow brown with brown gray mottlings; firm to stiff. Moderate plasticity; moist.		AD	

W.A. WAHLER & ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	2 OF 3	DH-10

DRILL RIG	HELICAL AUGER	HOLE ELEVATION 95.4	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE)	NOT ENCOUNTERED	HOLE DIAMETER 4"	DATE DRILLED 9/18/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
(40) 52	CL		B-5 1.5/1.5	DR 9	5/.5 4/.5 5/.5
(42)		HOLE TERMINATED @ 41.7 FEET			

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

∇ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO. DH-10
	PALO ALTO • NEWPORT BEACH • CALIF.	PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 3 OF 3	

DRILL RIG HELICAL AUGER	HOLE ELEVATION 97.2	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT DETERMINED	HOLE DIAMETER 4-1/2"	DATE DRILLED 9/17/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
96 (2) 94 (4)	FILL	FILL; mixed gravel, sand clay and some concrete		AD	
92	CL	4.5-6.0' CLAY; silty; dark gray mottled with brownish gray.	S-1 1.5/1.5	P	14/.5 18/.5 18/.5
(6) 90 (8)	SP	6.0-10.0' SAND; very little fines, medium grained; moderate brown gray with yellow orange mottlings; dense.	B-1 1.5/1.5	DR 36	
88			B-2 (cuttings)	AD	
(10) 86	SP GP	10.0-15.0 SAND; gravelly; almost clean; no fines; dense; moderate yellow brown mottled with brown gray; 1 inch to 1½" hard, rounded gravel; damp.	J-1	DR D R 42	5/.5 13/.5 29/.5
(12) 84 (14)				AD	
82 (16)	SM	15.0-17.0' SAND, silty; some clay; moderate yellow brown with soft; moist (possibly from water placed in hole)	B-3	DR R 9	3/.5 6/.5
80 (18)	CL	17.0-20.0' CLAY, silty; mottled brown gray and moderate yellow brown; moderate plasticity; damp.	S-2 1.0/1.5	P	
78			B-4	DR D R 8	2/.5 4/.5 4/.5
(20)				AD	

W.A. WAHLER
& ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SOIL EXPLORATION
DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	1 OF 3	DH-11

DRILL RIG HELICAL AUGER	HOLE ELEVATION 97.2	LOGGED BY ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE) NOT DETERMINED	HOLE DIAMETER 4-1/2"	DATE DRILLED 9/17/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE		REMARKS
76 (22)	CL	CLAY, sandy, some gravel, medium brown to yellow brown; moderate plasticity; moist; firm		AD		
		grades to	S-B	P		
74 (24)	SP	SAND; medium grained; mottled brown gray and yellow brown, loose	B-5	D	R	2/3/4
72 (26)	CL-CH	CLAY silty; brownish gray, moderate to high plasticity; firm grades to	S-4	P		
70 (28)	SC	SAND, clayey; gray mottled w/yellow brown; low plastic fines. Loose	B-6	D	R	4/4/4
68 (30)	CL-CH	CLAY, silty; brownish gray soft to firm; moderate to high plasticity moist		AD		
66 (32)		color change to dark blue gray at 31'; slightly sandy				
64 (34)			S-5	P		
62 (36)		color change to light brownish gray at 35', grades to	B-7	P	R	7/6/7
60 (38)	CL	CLAY, sandy alternating w/sand; mottled gray w/yellow brown, stiff				
		increasingly sandy; and denser from 38 to 40'.		AD		
58						

W.A. WAHLER & ASSOCIATES

PALO ALTO • NEWPORT BEACH • CALIF.

LOS GATOS CREEK CHANNEL

SOIL EXPLORATION DRILL HOLE LOG

PROJECT NO.	DATE	SHEET NO.	HOLE NO.
0546	OCTOBER 1970	2 OF 3	DH-11

DRILL RIG	HELICAL AUGER	HOLE ELEVATION	97.2	LOGGED BY	ASB
GROUNDWATER DEPTH (BELOW GROUND SURFACE)	NOT DETERMINED	HOLE DIAMETER	4-1/2"	DATE DRILLED	9/17/70

ELEVATION (Depth)	CLASS.	DESCRIPTION FIELD IDENTIFICATION	SAMPLE NUMBER	MODE	REMARKS
56 (42)	SC	SAND, clayey; medium yellow brown to brown gray		AD	
	GP	GRAVEL, sandy; medium brown mottled medium yellow brown; little fines; mostly hard subrounded fine gravel and coarse sand; very dense	B-8	D R	20/27/36
		TERMINATED HOLE @ 43.2 FEET			

THE DATA PRESENTED ON THIS LOG IS APPROXIMATE ONLY BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT AND DISCONTINUOUS SAMPLING NECESSITATED BY USE OF SMALL DIAMETER HOLES.

THE INFORMATION PRESENTED ON THE LOG INDICATES THE CONDITIONS FOUND ONLY IN THE HOLE LOGGED AND AT THE DATE INDICATED AND MAY OR MAY NOT BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND DATES.

▽ DENOTES WATER LEVEL ENCOUNTERED DURING DRILLING OF THIS DRILL HOLE. THIS LEVEL IS SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PRIMARILY PROVIDE DATA FOR DESIGN PURPOSES AND NOT NECESSARILY THE PURPOSES OF SPECIFIC CONSTRUCTORS.

W.A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	SOIL EXPLORATION DRILL HOLE LOG			HOLE NO.
		PROJECT NO. 0546	DATE OCTOBER 1970	SHEET NO. 3 OF 3	DH-11

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

PRIMARY DIVISIONS			GROUP SYMBOL	PATT.	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIALS IS LARGER THAN #200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN #4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	○	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
			GP	●	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
		GRAVEL WITH FINES	GM	┃	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES. NON-PLASTIC FINES.
			GC	▨	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES. PLASTIC FINES.
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN #4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	°	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES.
			SP	•	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
		SANDS WITH FINES	SM	┃	SILTY SANDS, SAND-SILT MIXTURES. NON-PLASTIC FINES.
			SC	▨	CLAYEY SANDS, SAND-CLAY MIXTURES. PLASTIC FINES.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE	SILTS & CLAYS	LIQUID LIMIT IS LESS THAN 50	ML	│	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILT WITH SLIGHT PLASTICITY.
			CL	▧	INORGANIC CLAYS OR LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS.
			OL	┆	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY.
	SILTS & CLAYS	LIQUID LIMIT IS GREATER THAN 50	MH	┃	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS.
			CH	▨	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
			OH	▧	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
	HIGHLY ORGANIC SOILS		PT	≈	PEAT AND OTHER HIGHLY ORGANIC SOILS.

GRAIN SIZES

	U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS		
	200	50	16	4	3/4"	3"	6"
SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

MOISTURE CONDITION (INCREASING MOISTURE ——→)

DRY	SLIGHTLY DAMP	DAMP	MOIST	VERY MOIST	WET (SATURATED)
		(PL)			(LL)

SAMPLE NUMBER COLUMN

Type of sample container:

BAG	B
JAR	J
SHELBY TUBE	S
LINER (TUBE)	L
WRAPPED CORE	WC
BOX	X

MODE COLUMN

Method of Advancing hole:

DRILL	
FLIGHT AUGER	AD
BUCKET AUGER	BD
SPIN AUGER	SD
ROTARY DRILL	RD
CABLE TOOL	CT
PENETROMETER	P
SAMPLER	
DRIVE	DR
PITCHER BARREL	PB
CORE	C

Recovery Ratio indicated by a fraction:

$$\frac{1.2}{1.5} = \frac{\text{footage recovered}}{\text{footage sampled}}$$

REMARKS COLUMN

Number of blows* required to drive sampler are shown for each 0.5 ft. of penetration as follows:

17/.5 22/.5 29/.5

Terminated hole: Sufficient information obtained.

Refusal: Stopped by material too hard for equipment.

Abandoned hole: Stopped because of difficulties as explained on log.

RELATIVE DENSITY

SANDS & GRAVELS	BLOWS/FOOT*
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

CLAYS & SILTS	BLOWS/FOOT*	STRENGTH ‡
VERY SOFT	0-2	0-1/4
SOFT	2-4	1/4-1/2
FIRM	4-8	1/2-1
STIFF	8-16	1-2
VERY STIFF	16-32	2-4
HARD	Over 32	OVER 4

* Number of blows of 140 pound hammer falling 30 inches to drive a 2-inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡ Unconfined compressive strength in tons/sq.ft. Read from a pocket penetrometer.

W.A. WAHLER & ASSOCIATES

PALO ALTO • NEWPORT BEACH • CALIF.

KEY FOR EXPLORATION LOGS

SHEET No. 1 of 3
DATE LOGGED 9/15/70
LOGGED BY ASB
RIG Rubber Tire-mounted Backhoe
PIT WIDTH 18 inches

PIT NO.	DEPTH IN FEET	SOIL TYPE	DESCRIPTION	SAMPLE	
T-1	0-1.5'		DEBRIS FILL; mixed sand and gravel and concrete blocks.		Access Road Excavation
	1.5-4.0'	CL	CLAY; silty; dark gray with yellow orange streaks; desiccation cracks along sides of cut; very stiff; medium plasticity.	B-1 2-4'	
	4-5'	ML	SILT; sandy, clayey; brownish gray w/yellow orange streaks.		
	5-9'	SM	SAND; silty, some clay binder, mostly fine sand; medium yellow brown; dense.	B-2 7-9'	
	9-12.5'	SW	SAND; gravelly, little fines, mostly fine sand; medium yellow brown to brown gray; damp.	B-3 10-12'	Trench Excavation
	12.5-18'	SP	SAND; gravelly with clay and silt; medium yellow brown; no plastic fines; damp.	B-4 13-15'	
			Bottom of Trench = 18' below top of creek bank (measured vertically)		
T-2	0-17'	(1)	DEBRIS; top of creek bank to top of backhoe excavation; debris layer consists of mixed concrete blocks, soil and concrete lining scattered on slope; very difficult to excavate because of concrete lining.		Creek Bank Slope
	17-22'	GP	GRAVEL; sandy, hard rounded gravel with medium grained sand, very clean, some thin layers of sand; apparently horizontal layers; exposure continuous for about 25 feet on both sides of trench.	B-1 17-20'	Trench Excavation
			NOTE: Depth is measured vertically with the top of the creek bank being the initial point of reference for all of the logs. See Figure A-2		

W. A. WAHLER
& ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

TEST PIT LOGS

PROJECT NO	DATE	DRAWING NO
0546	OCTOBER 1970	Fig. A-1a

SHEET No. 2 of 3	DATE LOGGED 9/15/70	LOGGED BY ASB
RIG Rubber Tire-mounted Backhoe		PIT WIDTH 18 inches

PIT NO.	DEPTH IN FEET	SOIL TYPE	DESCRIPTION	SAMPLE	
T-3			Approximately 100 feet of existing excavation for concrete box channel from station 33+50 to 35+10 exposing:		
	0-9'	CL-GC	CLAY; gravelly; gray.		
	9-20.5'	GP & SP	GRAVEL AND SAND; alternating layers, occurs in lenses, thickness varies from 2 to 5'; moderate yellow brown; appears stable on 1/2:1 temporary cut.		
T-4	0-16'	(1)	DEBRIS; top of creek bank to creek bottom; 1-2' thick layer of debris consisting of concrete blocks, soil, rocks overlying about 8" asphaltic concrete lining on 1 1/2:1 (horizontal to vertical) slope.		Creek Bank Slope
	16-18'	GW	GRAVEL; sandy, very clean; well graded.		Trench Exca-vation
T-5	0-11	(1)	ASPHALTIC CONCRETE; top of creek bank to top of backhoe excavation; 1 1/2:1 slope; 8"to 12" clean pea gravel underneath lining.		Creek Bank Slope
	11-13'	SP	SAND; fine to medium grained, some rounded, hard gravel; moderate yellow brown; little fines.	B-1 11-12'	Trench Exca-vation
	13-20'	GW	GRAVEL; sandy, very little fines, medium grained sand with greater than 50% rounded gravel; well graded.	B-2	
	20-23'	SP-GP	SAND; very gravelly, no fines, almost equal amounts of sand and gravel; gray; wet, water at 21' from top of creek bank (approximately 3' below creek bottom).	B-3 21-23'	

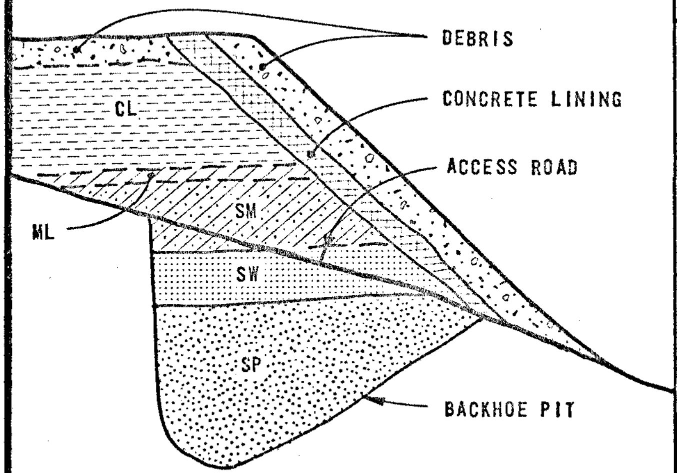
W. A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL	TEST PIT LOGS	
PALO ALTO • NEWPORT BEACH • CALIF.	PROJECT NO. 0546	DATE OCTOBER 1970	DRAWING NO Fig. A-1b

SHEET No. 3 of 3	DATE LOGGED 9/15/70	LOGGED BY ASB
RIG Rubber Tire-mounted Backhoe		PIT WIDTH 18 inches

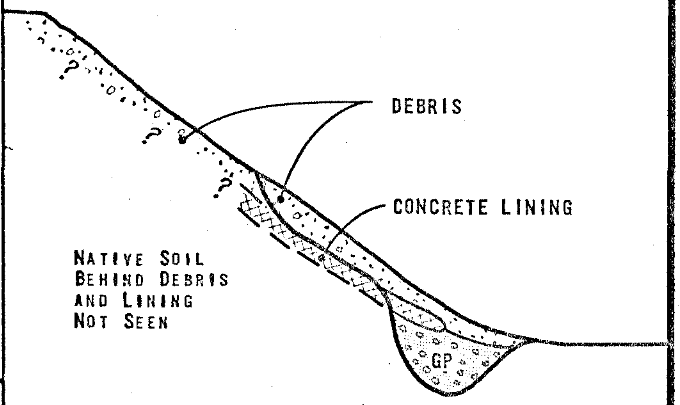
PIT NO.	DEPTH IN FEET	SOIL TYPE	DESCRIPTION	SAMPLE	
T-6	0-12'	(1)	DEBRIS; top of creek bank to top of inplace material as exposed along access road to creek bottom and backhoe excavation. Mixed debris: concrete blocks; soil; pieces of iron and tin cans.		Access Road Excavation
	12-18'	SP	SAND; mostly fine to medium grained; very little fines; medium yellow brown; exposed along access road and backhoe trench.		Trench Excavation
	18-21'	GP	GRAVEL; sandy, no clay binder; brownish gray to medium yellow brown; horizontal layers.		
		(1)	The debris material is a heterogenous mixture of clay, silt and sandy soil and deleterious material. This exists as a layer of undetermined thickness on the creek bank. Excavation was not accomplished with the backhoe because of concrete blocks and layers of asphaltic concrete. See Figure A-2. The data presented on these logs are representative of the conditions only at the place and at the time of the investigation. These logs were prepared primarily to provide data for design purposes and not necessarily for the purposes of specific contractors.		

W. A. WAHLER & ASSOCIATES	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	TEST PIT LOGS		
		PROJECT NO. 0546	DATE OCTOBER 1970	DRAWING NO Fig. A-1c

TEST PIT NO. T-1



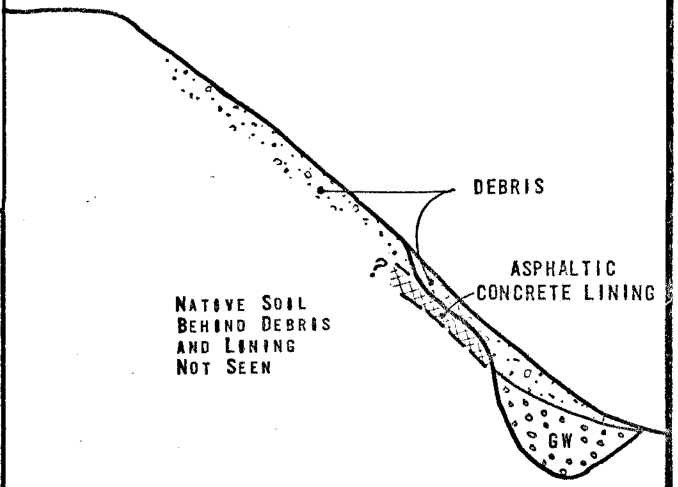
TEST PIT NO. T-2



TEST PIT NO. T-3

THIS EXCAVATION IS
SHOWN ON FIGURE 1

TEST PIT NO. T-4

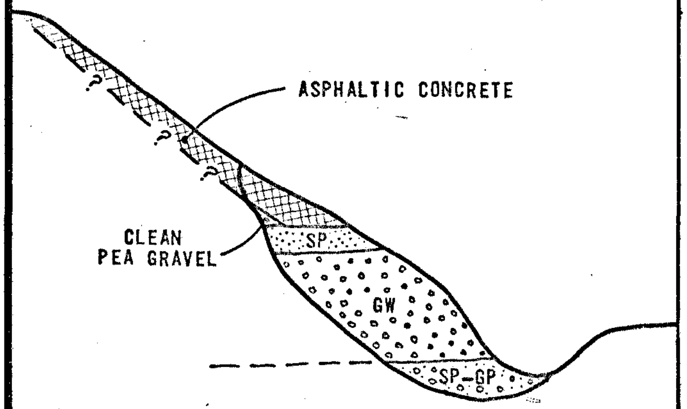


NOT TO SCALE

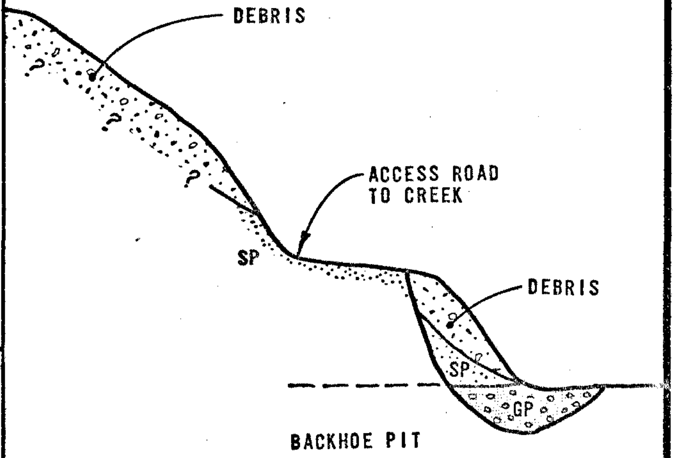
SEE FIGURE A-1 FOR
DETAILED DESCRIPTIONS

ALL SECTIONS LOOKING NORTH
(DOWNSTREAM)

TEST PIT NO. T-5



TEST PIT NO. T-6



W. A. WAHLER
& ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

DIAGRAMMATIC TEST PIT CROSS SECTIONS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	FIGURE A-2

APPENDIX B

LABORATORY INVESTIGATION

The laboratory investigation was programmed to determine the pertinent index and engineering properties of the foundation soils underlying the site. Testing results combined with observations made during the subsurface exploration were used as the main criteria for determining the engineering suitability of the surface and subsurface materials encountered.

Laboratory tests performed consisted of the following:

TEST	RESULTS PRESENTED
a. Gradation	Figure B-1
b. Compaction	Figure B-2
c. Atterberg Limits	Figure B-3
d. Direct Shear	Figure B-4
e. Consolidation	Figure B-5
f. Unit Weight	Table A
g. Sand Equivalent	Table A
h. Unconfined Compression	Table A

LOS GATOS CREEK CHANNEL

TABLE A

UNIT WEIGHTS:

Drill Hole	Sample	Depth	Dry Density p.c.f.		Moisture Content %
DH-3	S-1	10-11.5	91.25	@	27.3%
DH-1	S-1	14-15	97.98	@	15.7%
DH-10	S-1	9-10.5	90.55	@	17.6%

SAND EQUIVALENTS:

Test Pit No.	Sample	Depth	Sand Equivalent
T-1	B-1	1.5-4	5
T-1	B-2	7-9	21
T-1	B-3	10-12	72
T-1	B-4	13-15	14
T-2	B-1	17-20	43
T-5	B-1	11-12	18
T-5	B-2	18-20	49
T-5	B-3	21-23	78

UNCONFINED COMPRESSIONS:

Drill Hole	Sample	Depth	Unconfined Compressive Strength - p.s.f.
DH-1	S-2	18-19.5	476
DH-2	S-1	18-19.5	2911
DH-3	S-1	10-11.5	3332
DH-3	S-3	25-26.5	1611
DH-4	S-1	19-20.5	584
DH-8	S-2	25.27.5	1997
DH-11	S-2	17-18	1474

SOIL MECHANICS & FOUNDATION ENGINEERS

GRADATION TEST RESULTS

Hole No.

Tested By DM

Area

Appr. By

Date 10/70

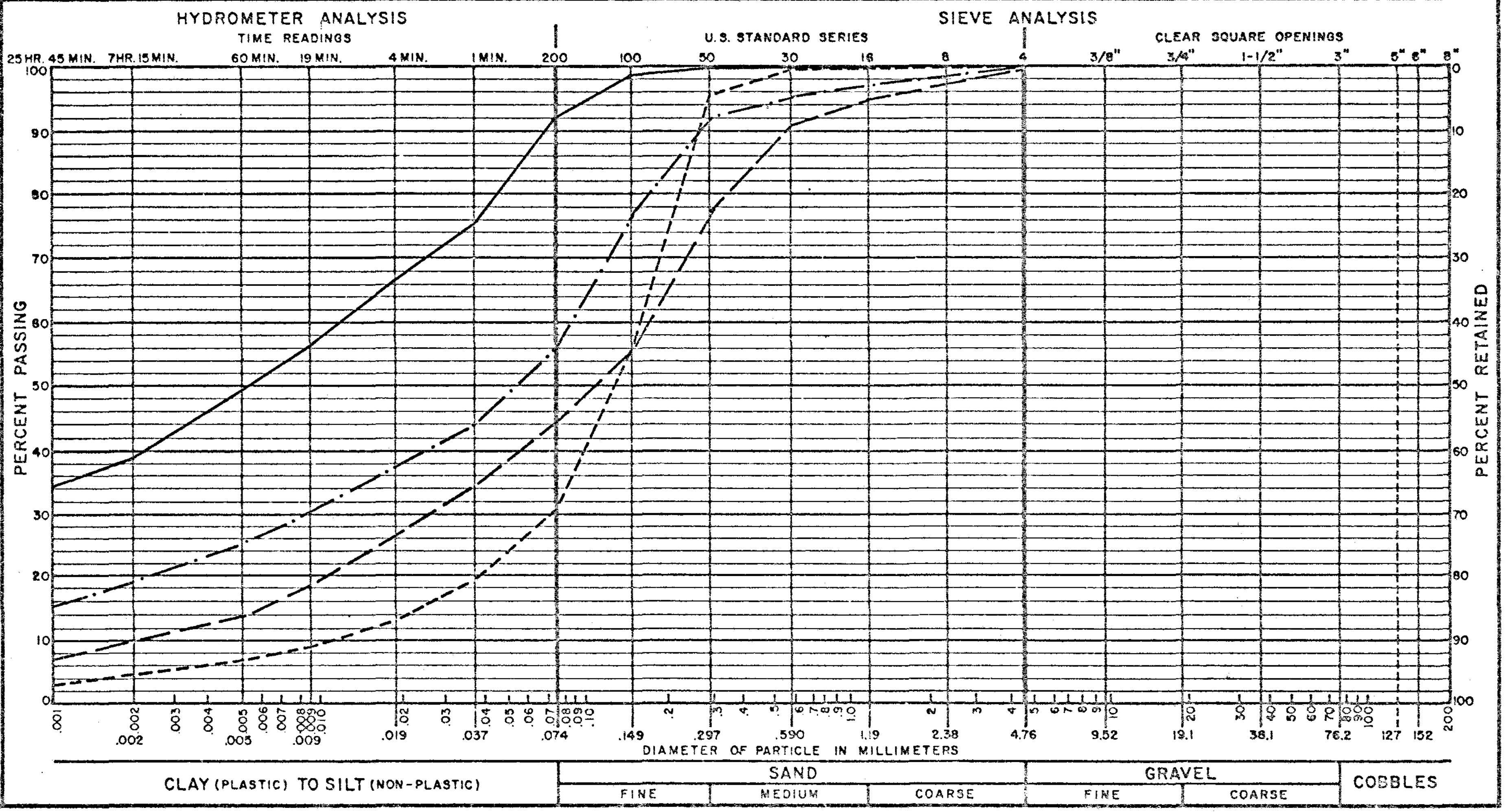
Job No. 0546

File No.

Fig. No. B-1A

K E Y: ——— - - - - - — — — —·—·—

LL	64	---	---	---						
PL	22	---	---	---						
PI	42	---	---	---						
NAT. W/C	27.2	5.7	18.6	15.7						
CLASSIF. SYMB.	CH	SM	SM	CL						
SAMPLE NO.	S-1	B-1	S-1	S-1						
DEPTH FT.	10-11.5	10-12	19-20.5	14-15						
HOLE NO.	DH-3	DH-2	DH-4	DH-1						



SOIL MECHANICS & FOUNDATION ENGINEERS

Hole No.

Tested By DM

Area

Appr. By

Date 10/70

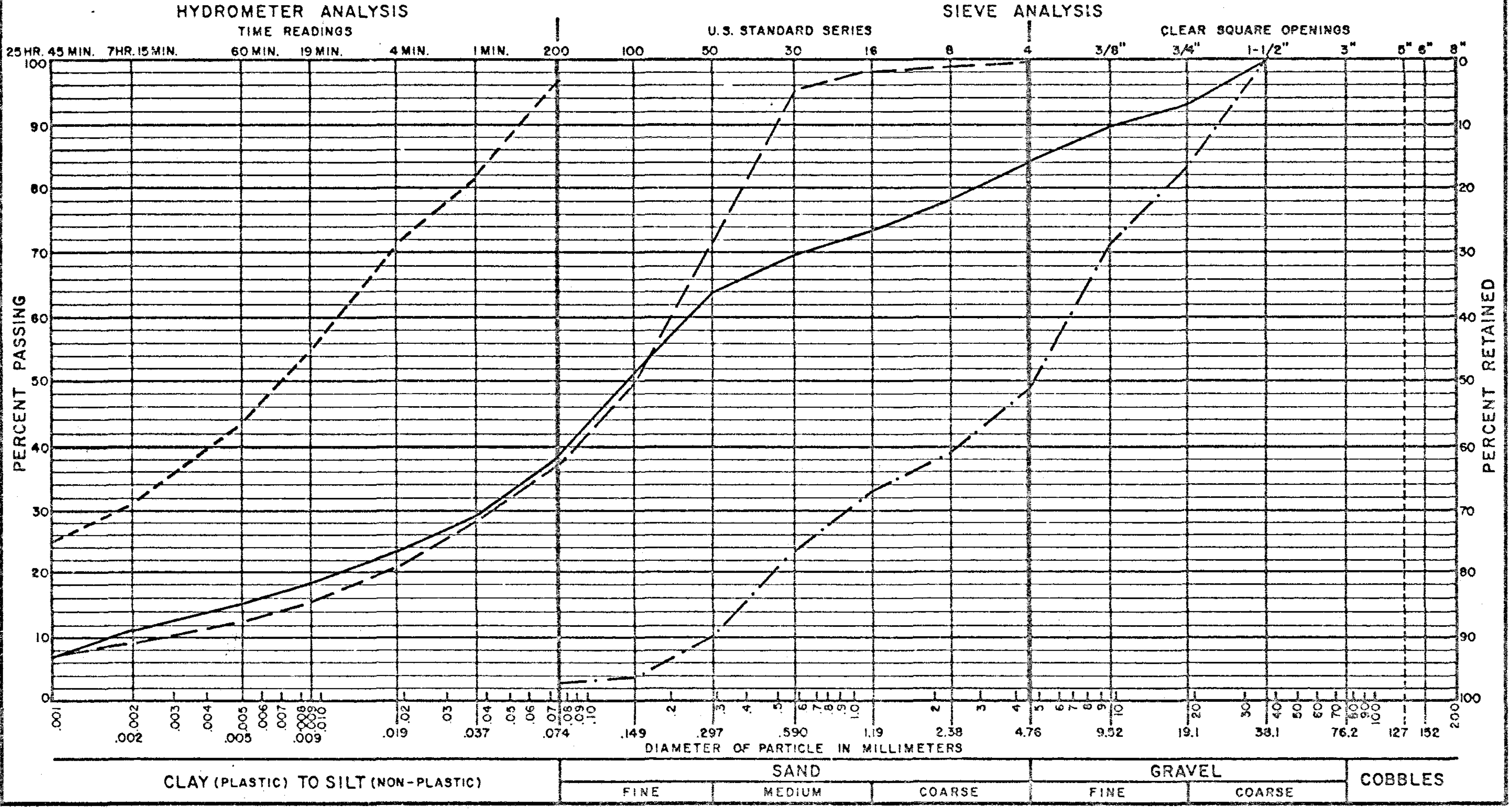
Job No. 0546

GRADATION TEST RESULTS

File No.

Fig. No. B-1B

K E Y:	———	- - - - - -	— — —	—·—·—
LL	---	46	---	---
PL	---	23	---	---
PI	---	23	---	---
NAT. W/C	5.0	30.6	---	---
CLASSIF. SYMB.	SM-SC	CL	SM-SC	SP
SAMPLE NO.	J-1	S-2	B-1	B-2
DEPTH FT.	5-6.5	25-27.5	11-12	18-20
HOLE NO.	DH-7	DH-7	T-5	T-5



SOIL MECHANICS & FOUNDATION ENGINEERS

Hole No.

Area

Job No. 0546

File No.

Fig. No. B-1C

Tested By DM

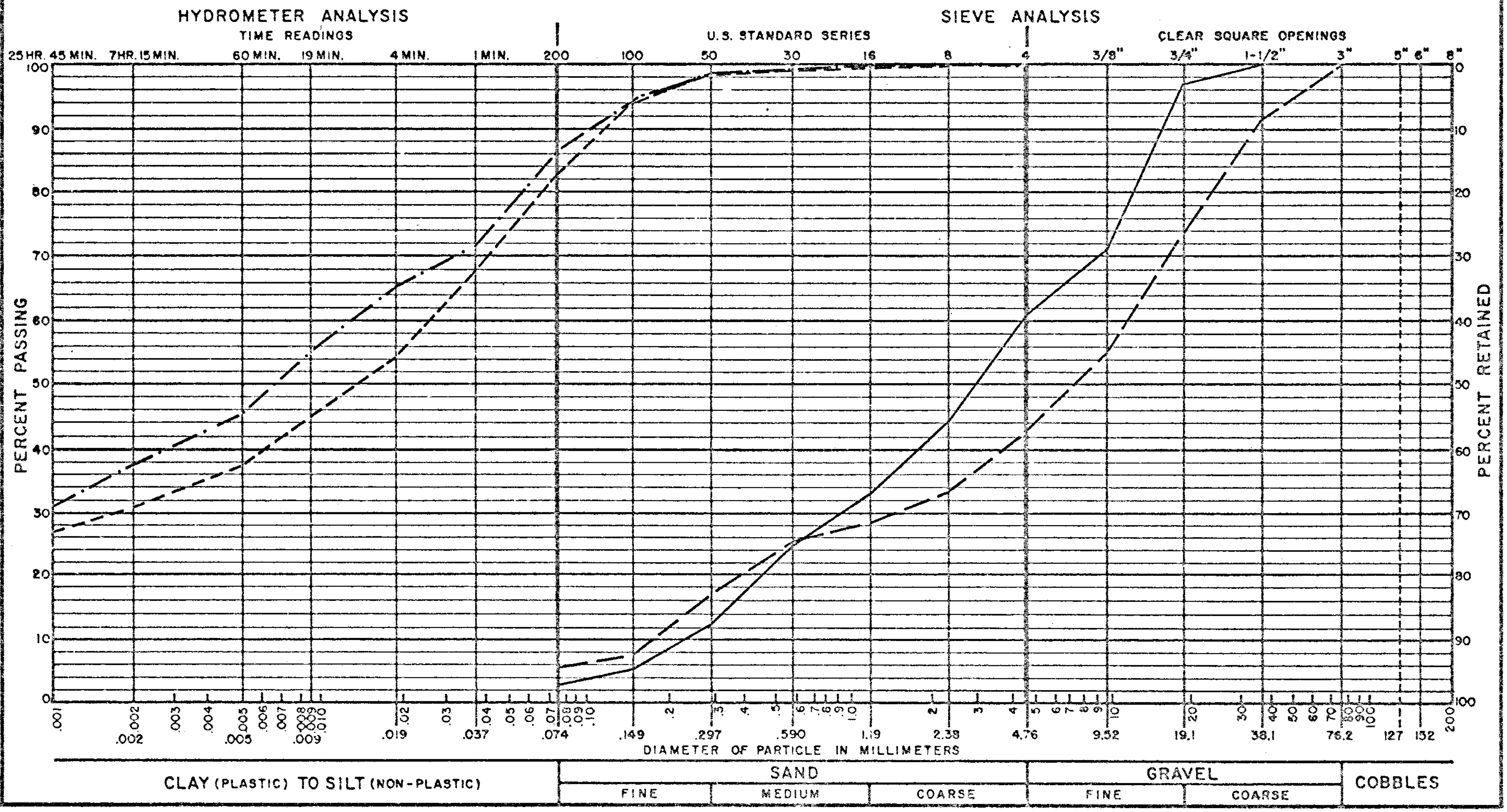
Appr. By

Date 10/70

GRADATION TEST RESULTS

KEY: ———— - - - - - - — — — —·—·—

LL	---	---	---	---					
PL	---	---	---	---					
PI	---	---	---	---					
NAT. W/C	---	33.3	---	---					
CLASSIF. SYMB.	SP	CL-CH	GP	CL-CH					
SAMPLE NO.	B-3	J-1	B-1	B-1					
DEPTH FT.	21-23	6-6.5	17-20	1.5-4					
HOLE NO.	T-5	DH-9	T-2	T-1					



SOIL MECHANICS & FOUNDATION ENGINEERS

GRADATION TEST RESULTS

Hole No.

Tested By DM

Area

Appr. By

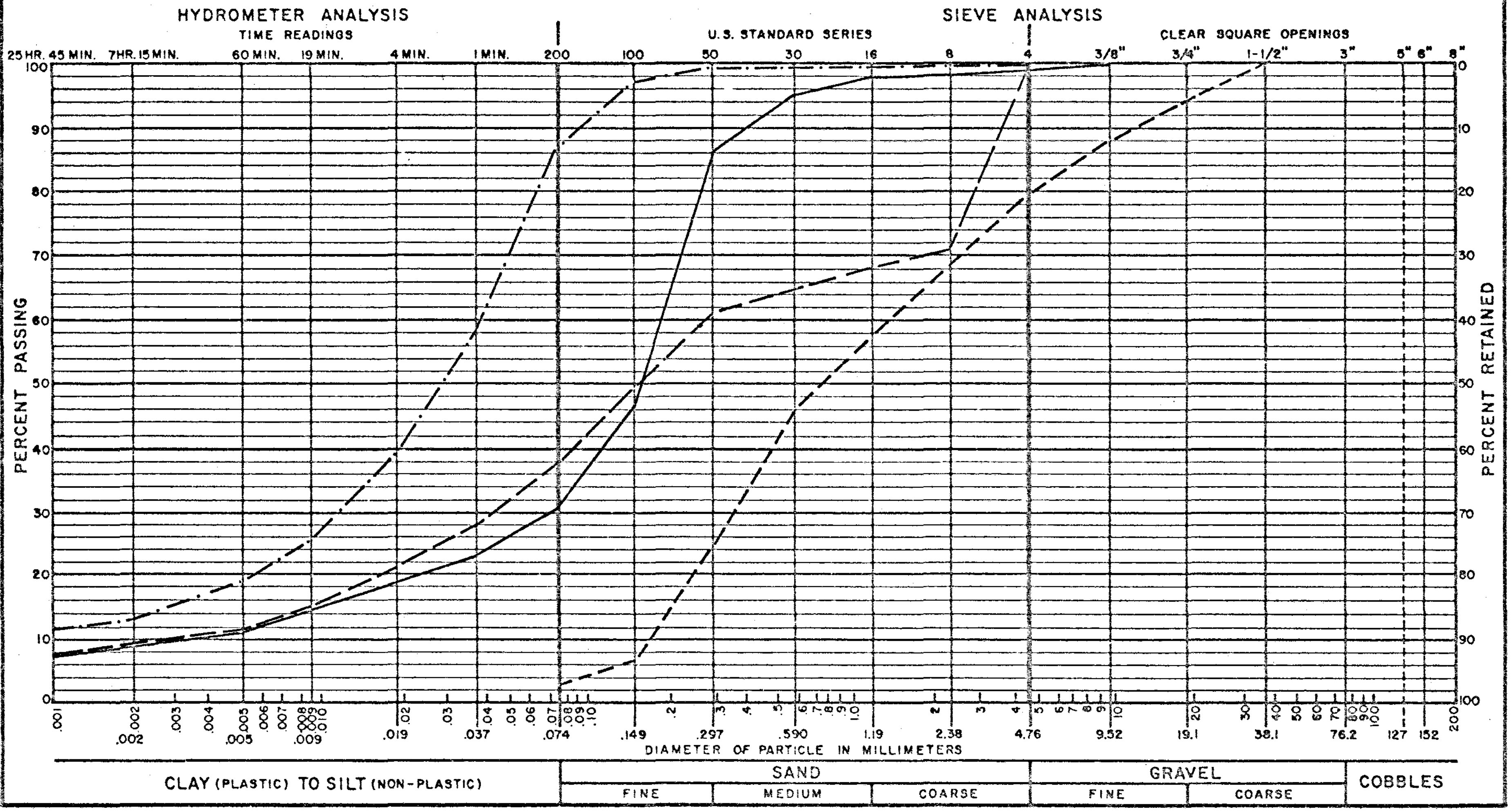
Date 10/70

Job No. 0546

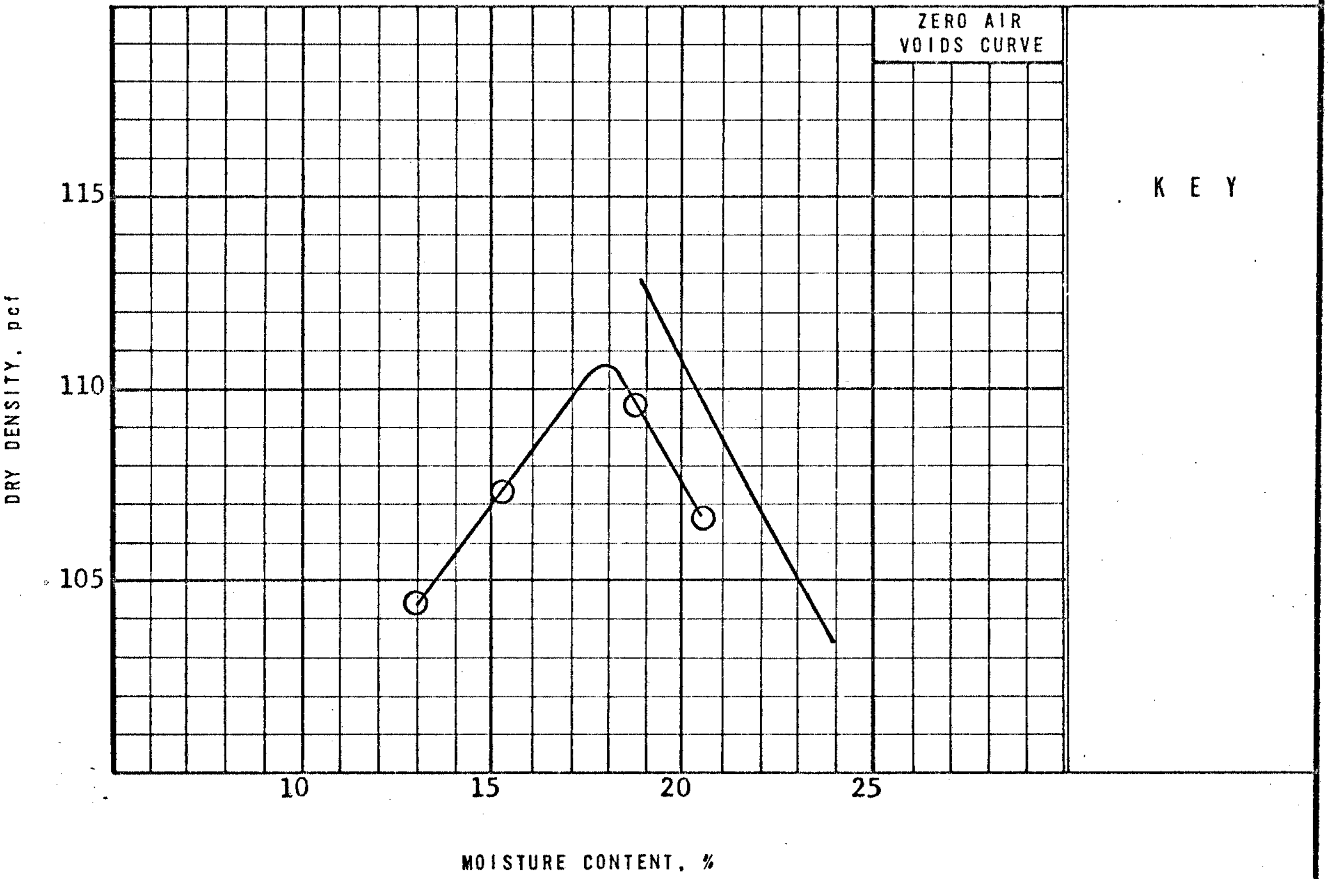
File No.

Fig. No. B-1D

KEY:	———	- - - - -	— — —	—·—·—					
LL	---	---	---	---					
PL	---	---	---	---					
PI	---	---	---	---					
NAT. W/C	---	---	---	24.62					
CLASSIF. SYMB.	SM-SC	SP	SM-SC	CL-CH					
SAMPLE NO.	B-2	B-3	B-4	S-2					
DEPTH FT.	7-9	10-12	13-15	17-18					
HOLE NO.	T-1	T-1	T-1	DH-11					



SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING	
							3/4"	NO. 4
B-1	T-1	1.5-4	Dark brown, silty CLAY (CL-CH)	2.75 (est)	---	---	100	99.9



SAMPLE NO.	T-1 B-1		
NATURAL WATER CONTENT, %	---		
OPTIMUM WATER CONTENT, %	17.9		
MAXIMUM DRY DENSITY, pcf	110.7		
TEST DESIGNATION	CAL-IMPACT		

SOIL MECHANICS and FOUNDATION ENGINEERS

PALO ALTO • NEWPORT BEACH • CALIF.

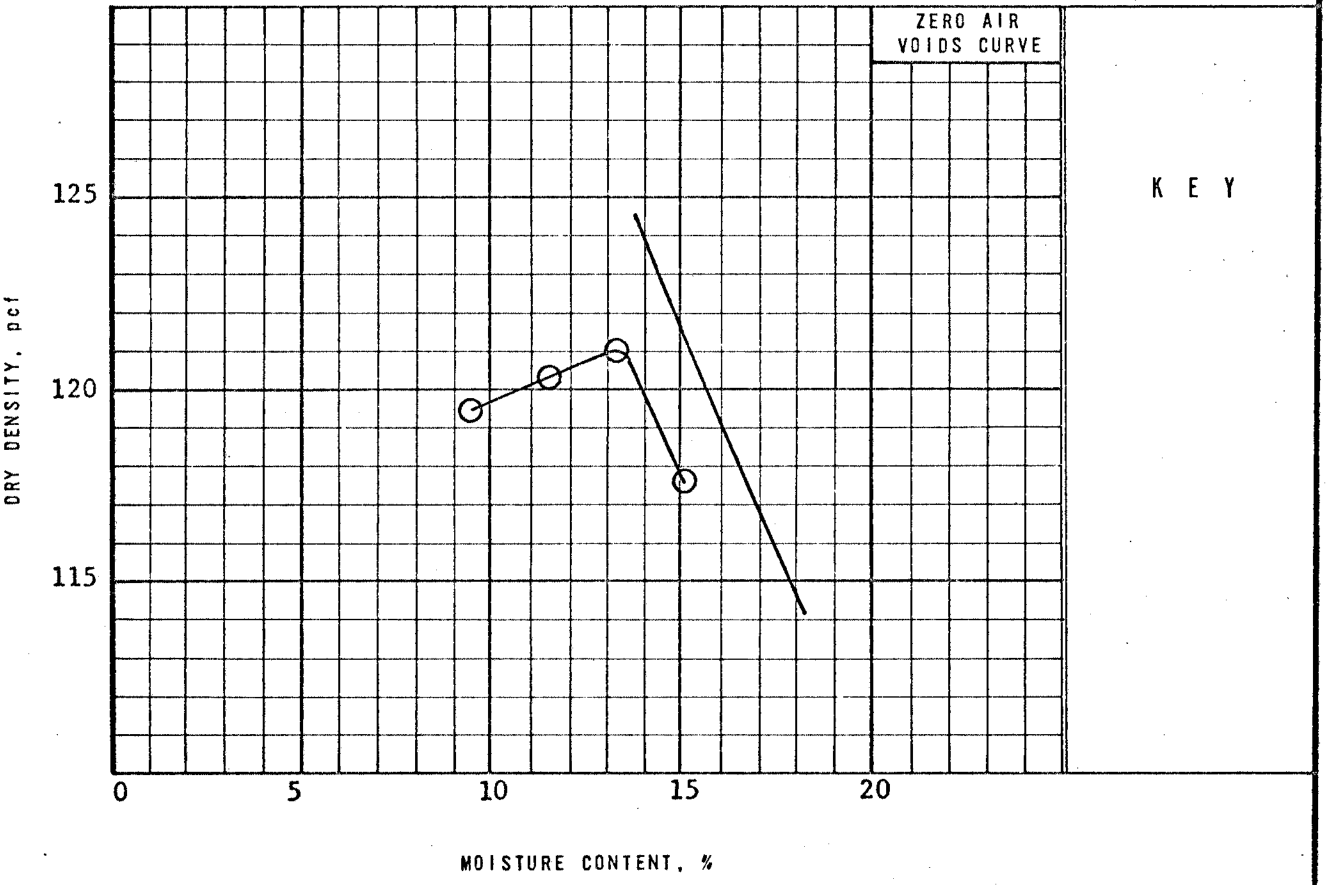
LOS GATOS CREEK CHANNEL

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-2A

805-2

SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING	
							3/4"	NO. 4
B-2	T-1	7-9	Brown, silty SAND (SM-SC)	2.75 (est)	---	---	100.0	98.8



SAMPLE NO.	T-1 B-2		
NATURAL WATER CONTENT, %	---		
OPTIMUM WATER CONTENT, %	13.2		
MAXIMUM DRY DENSITY, pcf	121.0		
TEST DESIGNATION	CAL-IMPACT		

805-2

SOIL MECHANICS
and FOUNDATION
ENGINEERS

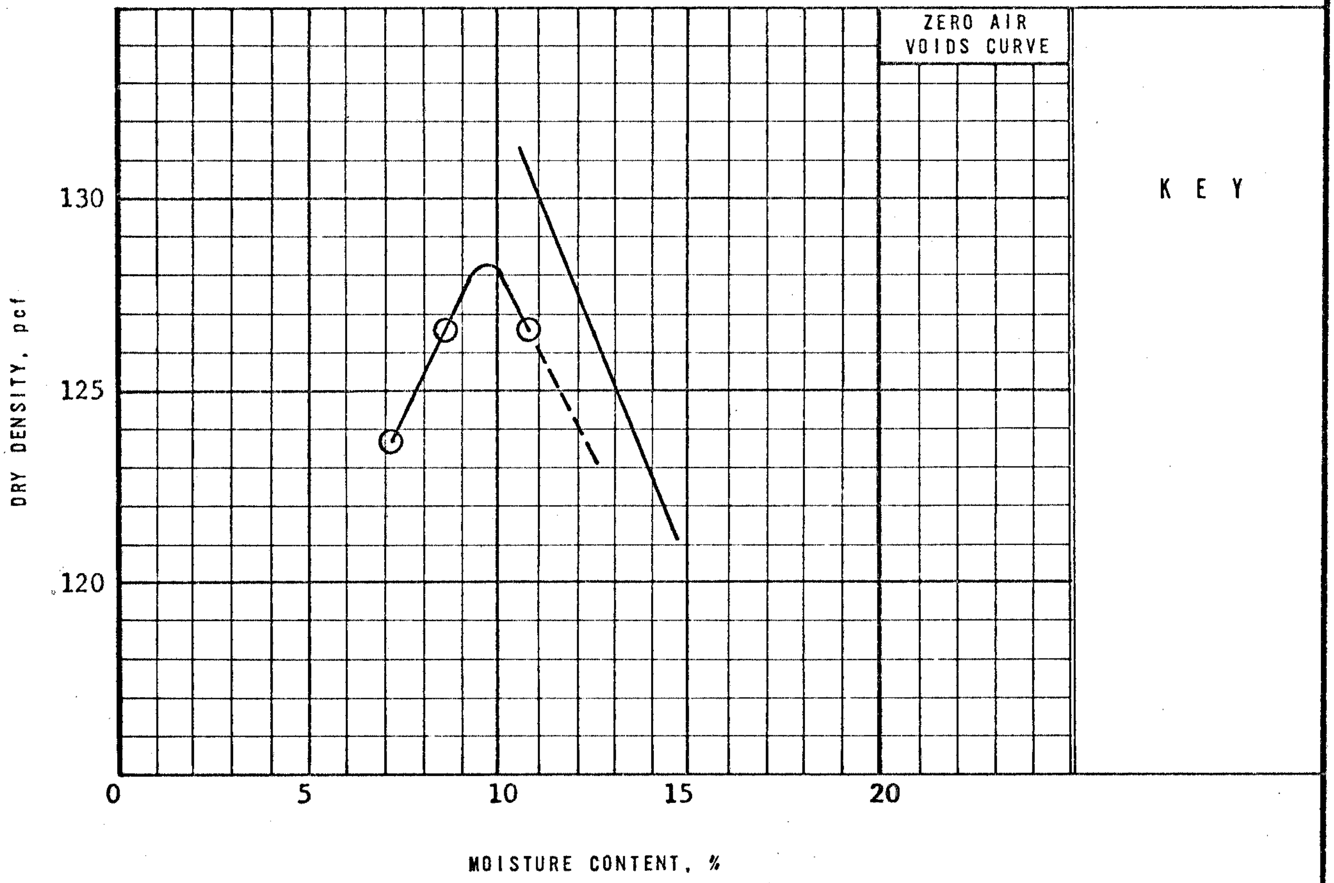
LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0542	OCTOBER 1970	B-2B

SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING	
							3/4"	NO 4
B-3	T-1	10-12	Brown, gravelly SAND (SP)	2.75 (est)	---	---	94.9	78.9



SAMPLE NO.	T-1 B-3		
NATURAL WATER CONTENT, %	---		
OPTIMUM WATER CONTENT, %	9.7		
MAXIMUM DRY DENSITY, pcf	128.3		
TEST DESIGNATION	CAL-IMPACT		

805-2

SOIL MECHANICS and FOUNDATION ENGINEERS

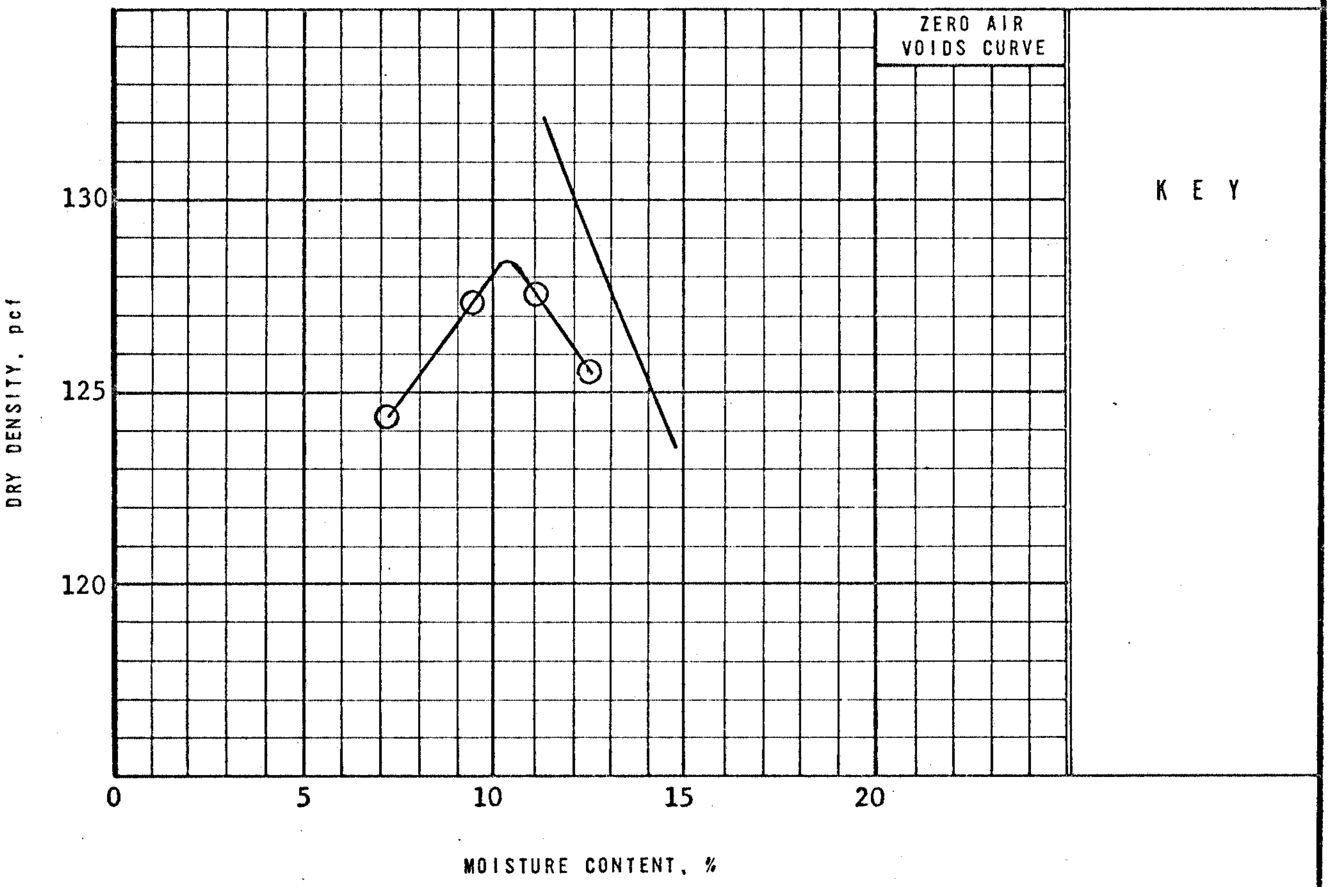
LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-2C

SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING	
							3/4"	NO. 4
B-4	T-1	13-14	Brown, clayey SAND (SM-SC)	2.75 (est)	---	---	94.2	75.8



SAMPLE NO.	T-1 B-4		
NATURAL WATER CONTENT, %	---		
OPTIMUM WATER CONTENT, %	10.2		
MAXIMUM DRY DENSITY, pcf	128.3		
TEST DESIGNATION	CAL-IMPACT		

SOIL MECHANICS and FOUNDATION ENGINEERS

PALO ALTO • NEWPORT BEACH • CALIF.

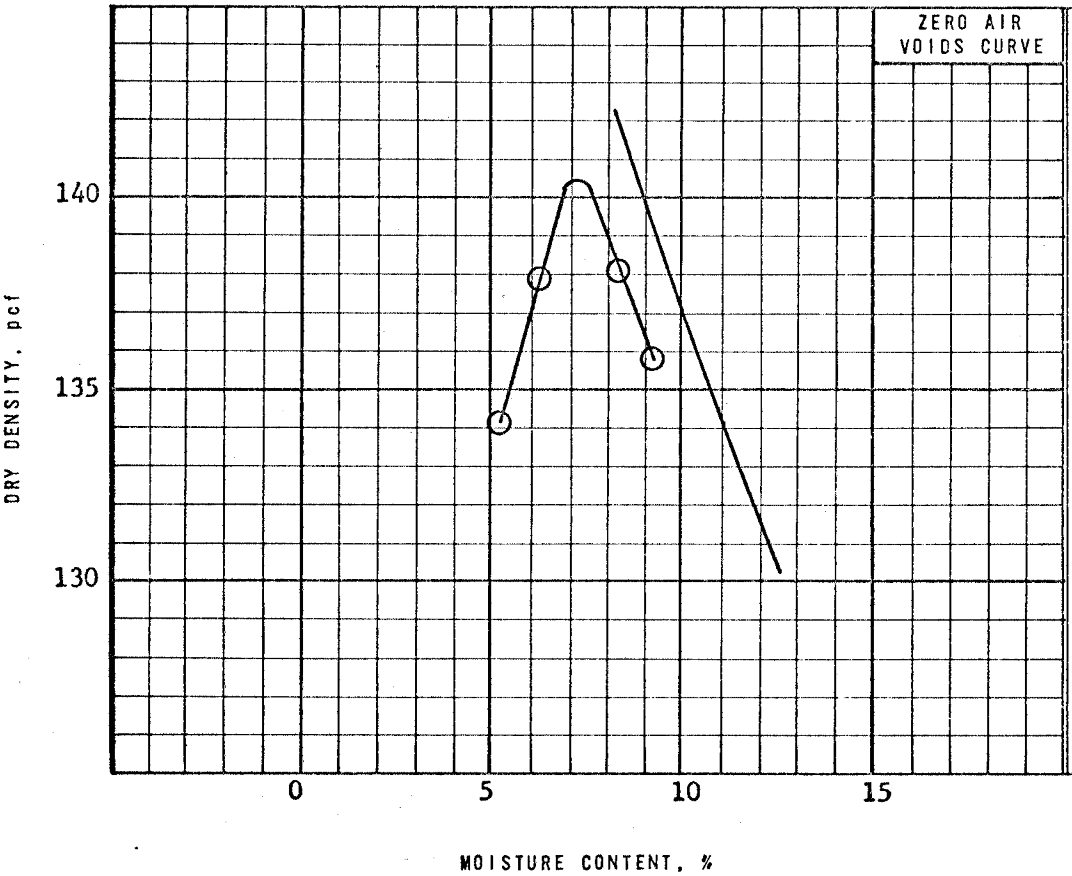
LOS GATOS CREEK CHANNEL

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-2D

805-2

SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING	
							3/4"	NO. 4
B-1	T-2	17-20	Brown, sandy GRAVEL (GP)	2.85 (est)	----	---	74.8	42.2



K E Y

SAMPLE NO.	T-2 B-1		
NATURAL WATER CONTENT, %	----		
OPTIMUM WATER CONTENT, %	7.2		
MAXIMUM DRY DENSITY, pcf	140.3		
TEST DESIGNATION	CAL-IMPACT		

SOIL MECHANICS and FOUNDATION ENGINEERS
PALO ALTO • NEWPORT BEACH • CALIF.

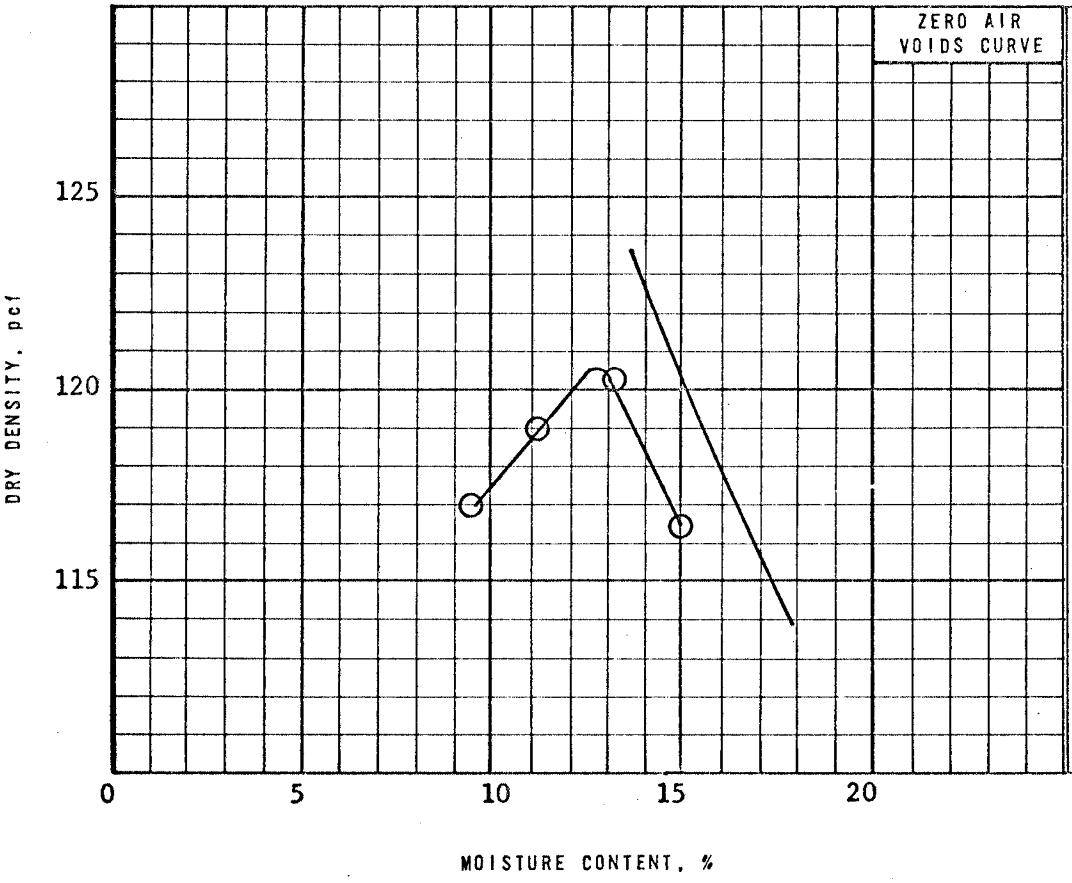
LOS GATOS CREEK CHANNEL

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-2E

805-2

SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING 3/4"	PERCENT PASSING NO. 4
B-1	T-5	11-12	Brown, silty SAND (SM-SC)	2.72 (est)	---	---	100	99.4



K E Y

SAMPLE NO.	T-5 B-1		
NATURAL WATER CONTENT, %	---		
OPTIMUM WATER CONTENT, %	12.8		
MAXIMUM DRY DENSITY, pcf	120.5		
TEST DESIGNATION	CAL-IMPACT		

SOIL MECHANICS and FOUNDATION ENGINEERS

PALO ALTO • NEWPORT BEACH • CALIF.

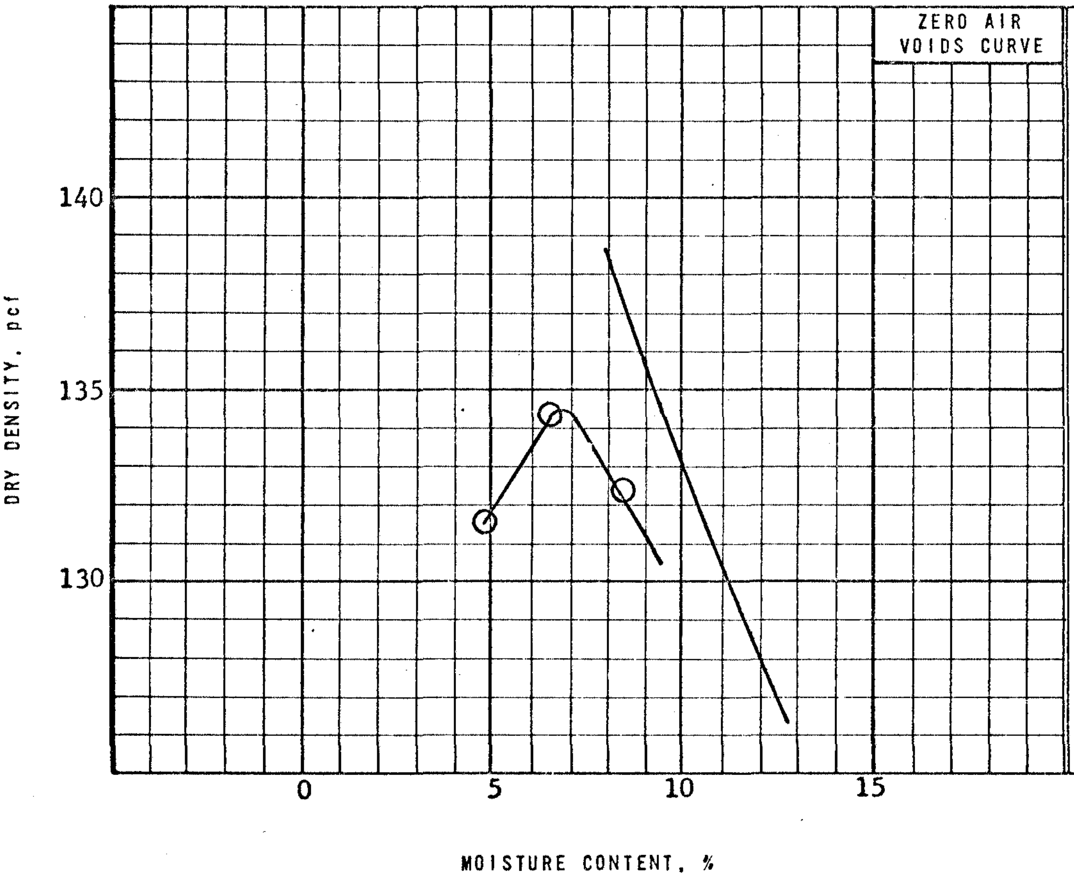
LOS GATOS CREEK CHANNEL

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-2F

805-2

SAMPLE NO.	HOLE NO.	DEPTH (ft)	SAMPLE DESCRIPTION	SPECIFIC GRAVITY	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PERCENT PASSING 3/4"	PERCENT PASSING NO. 4
B-3	T-5	21-23	Gray, gravelly SAND (SP)	2.75 (est)	---	---	96.6	60.6



KEY

SAMPLE NO.	T-5 B-3		
NATURAL WATER CONTENT, %	---		
OPTIMUM WATER CONTENT, %	6.9		
MAXIMUM DRY DENSITY, pcf	134.5		
TEST DESIGNATION	CAL-IMPACT		

805-2

SOIL MECHANICS and FOUNDATION ENGINEERS

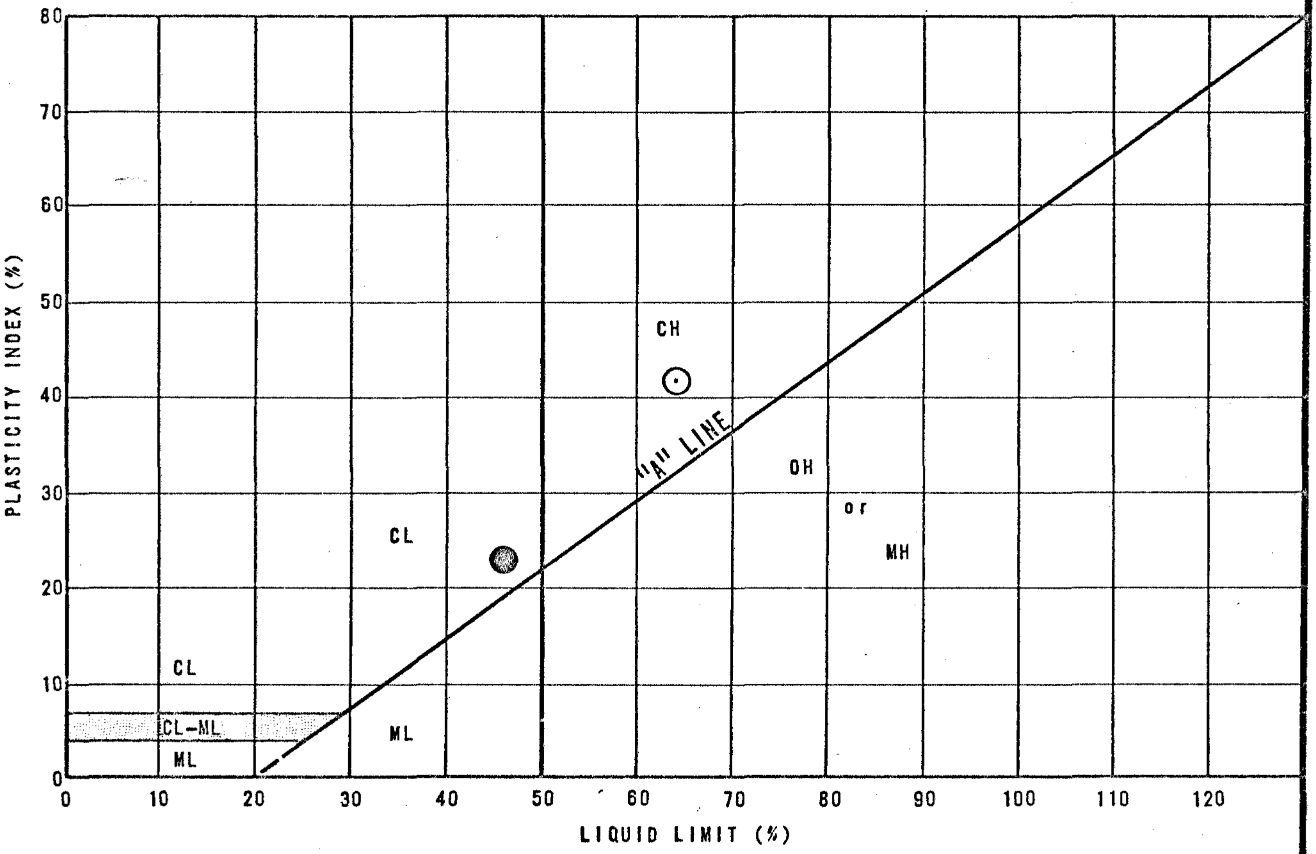
PALO ALTO • NEWPORT BEACH • CALIF.

LOS GATOS CREEK CHANNEL

COMPACTION TEST RESULTS

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-2G

PLASTICITY CHART



PLASTICITY DATA

KEY SYMBOL	HOLE NUMBER	DEPTH (feet)	NATURAL WATER CONTENT W (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX $\left(\frac{W - PL}{LL - PL}\right)$	UNIFIED SOIL CLASSIFICATION SYMBOL
⊙	DH-3 S-1	10-11.5	27.2	22	64	42	---	CH
●	DH-7 S-2	25-27.5	----	23	46	23	---	CL

740-3

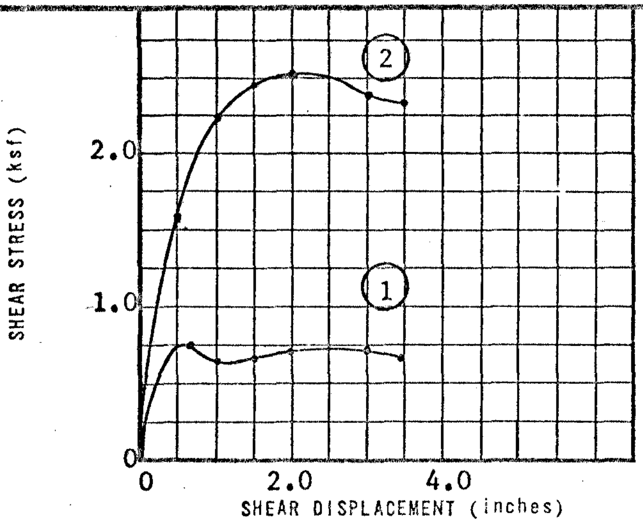
SOIL MECHANICS and FOUNDATION ENGINEERS

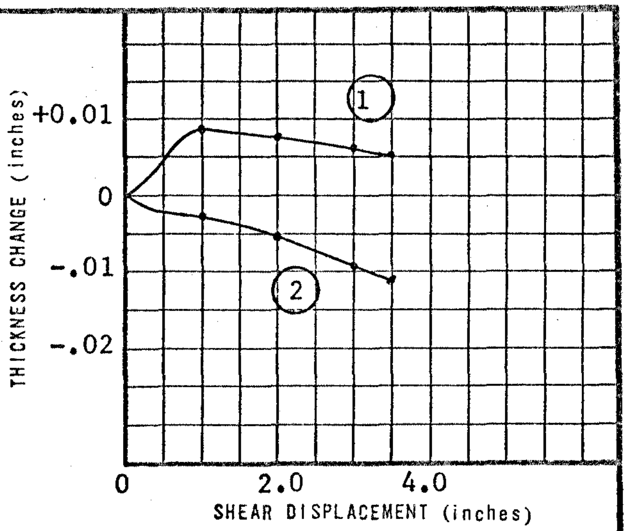
LOS GATOS CREEK CHANNEL

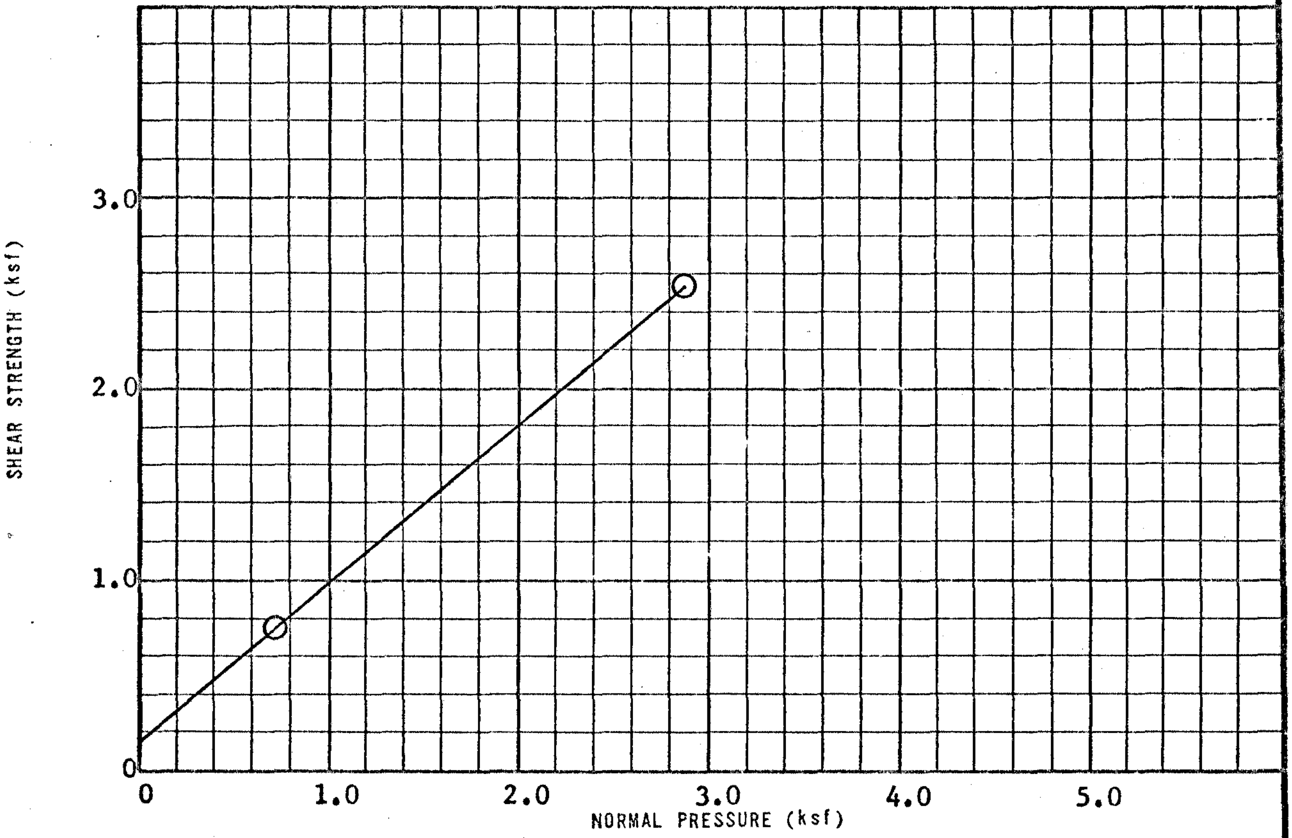
PALO ALTO • NEWPORT BEACH • CALIF.

ATTERBERG LIMITS - PLASTICITY DATA

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-3







HOLE NO. T-1 B-2

DEPTH (ft) 7.0-9.0

SAMPLE DESCRIPTION Brown, silty SAND (SM-SC)

TEST DESIGNATION Consolidated-drained

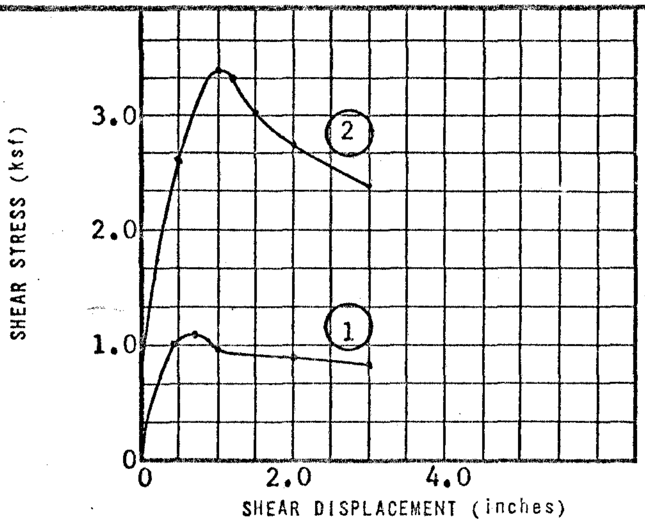
RATE OF STRAIN 0.10 in/min.

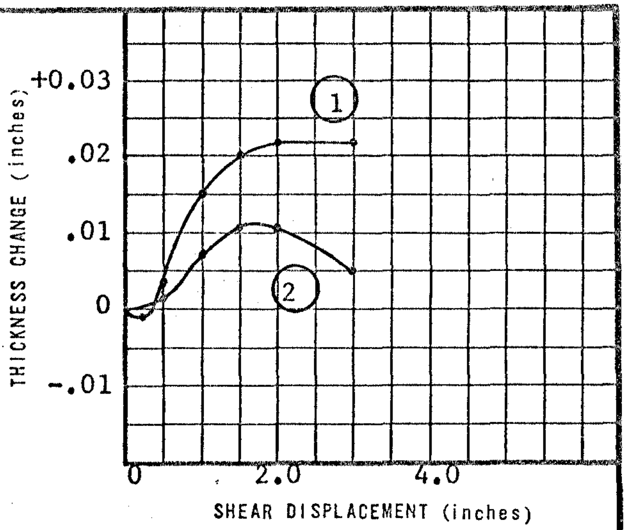
SPECIMEN NUMBER	1	2		
NORMAL PRESSURE (ksf)	0.72	2.88		
SHEAR STRENGTH (ksf)	0.76	2.55		
INITIAL WATER CONTENT (%)	12.7	12.4		
FINAL WATER CONTENT (%)	21.6	19.7		
DRY DENSITY (pcf)	103.2	103.4		

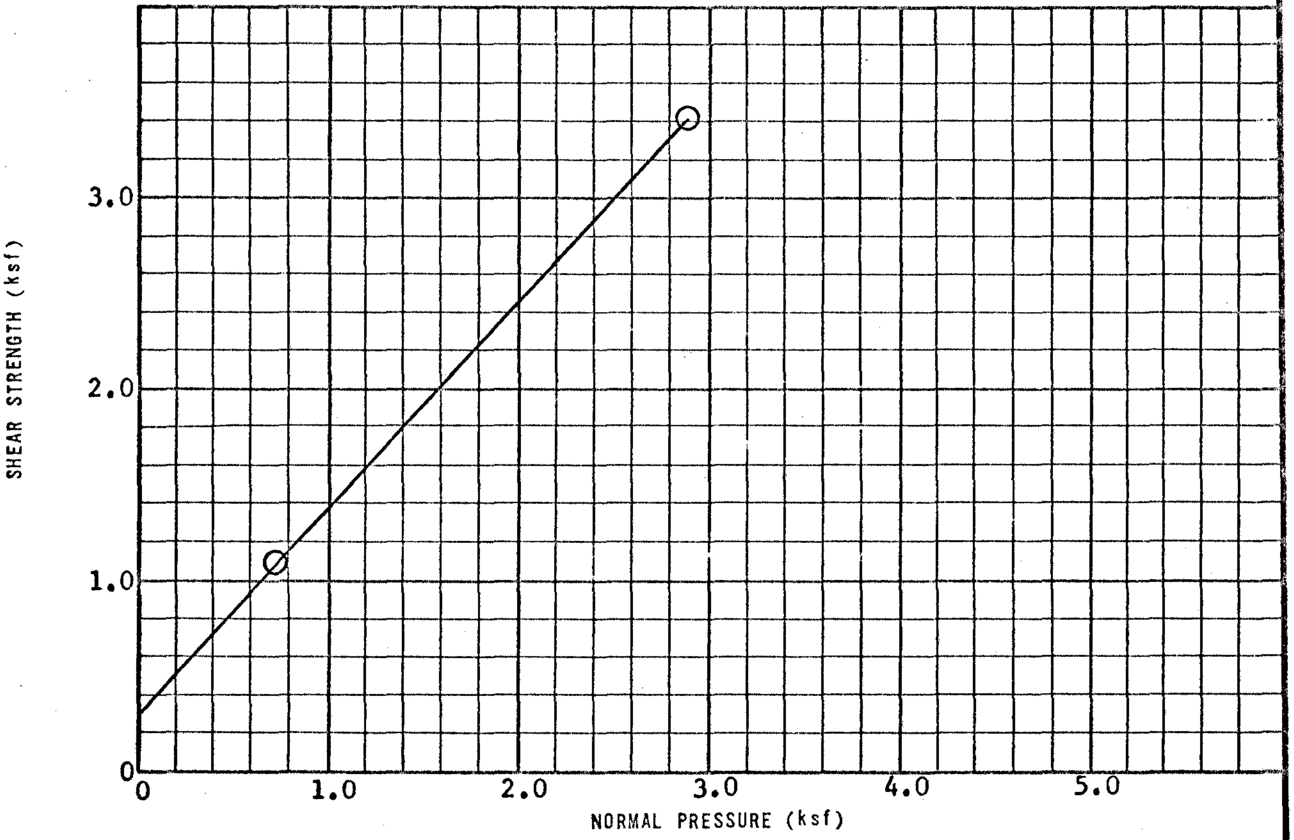
NOTE: $\phi = 40.0°$ C' = 0.18 ksf

SOIL MECHANICS and FOUNDATION ENGINEERS	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	DIRECT SHEAR TEST	
	PROJECT NO. 0546	DATE OCTOBER 1970	DRAWING NO. B-4A

811-2 Rev. 2/69







HOLE NO. T-1 B-3
DEPTH (ft) 10.0-12.0
SAMPLE DESCRIPTION Brown, gravelly SAND (SP)
TEST DESIGNATION Consolidated-drained
RATE OF STRAIN 0.10 in/min.

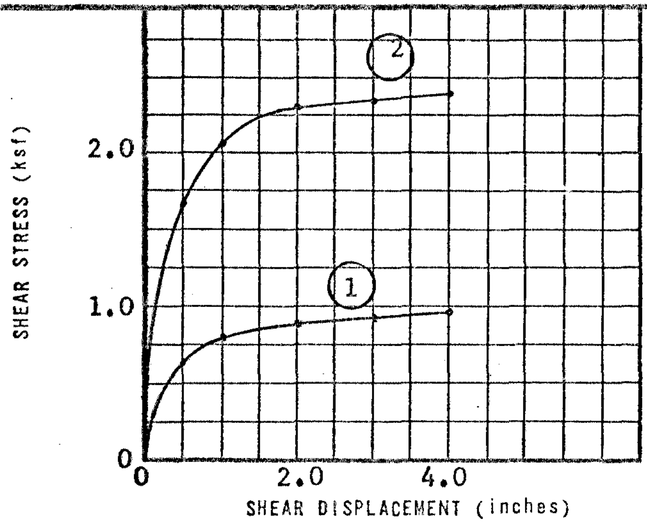
SPECIMEN NUMBER	1	2		
NORMAL PRESSURE (ksf)	0.72	2.88		
SHEAR STRENGTH (ksf)	1.10	3.40		
INITIAL WATER CONTENT (%)	7.4	7.5		
FINAL WATER CONTENT (%)	22.0	21.4		
DRY DENSITY (pcf)	106.9	106.7		

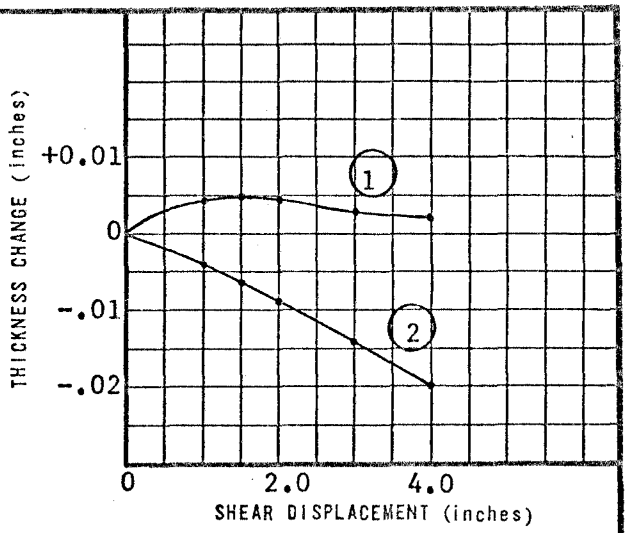
NOTE: $\phi = 47.0^\circ$ $C' = 0.25$ ksf

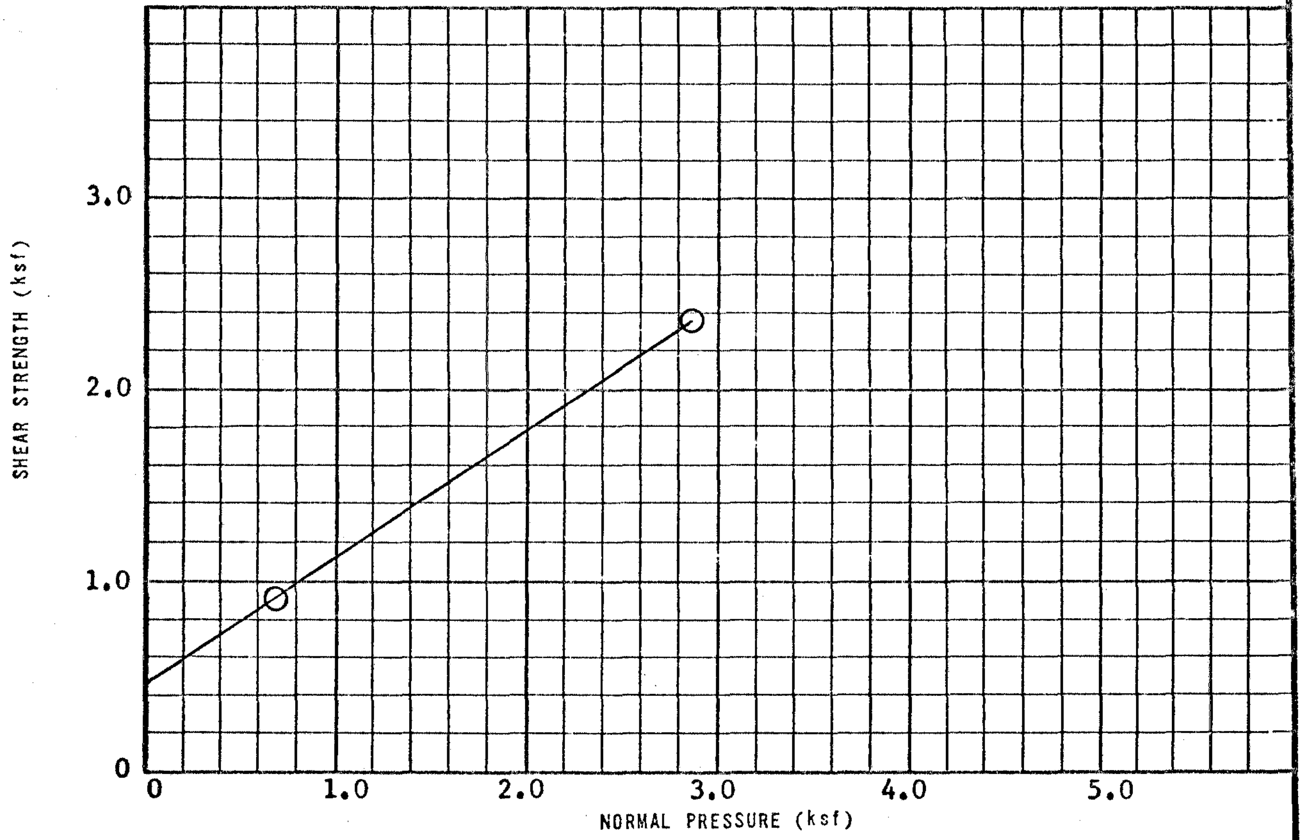
611-2 Rev. 2/69

SOIL MECHANICS and FOUNDATION ENGINEERS	LOS GATOS CREEK CHANNEL	DIRECT SHEAR TEST
	PALO ALTO • NEWPORT BEACH • CALIF.	

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-4B







HOLE NO. T-1 B-4

DEPTH (ft) 13.0-15.0

SAMPLE DESCRIPTION Brown, clayey SAND (SM-SC)

TEST DESIGNATION Consolidated-drained

RATE OF STRAIN 0.10 in/min.

SPECIMEN NUMBER	1	2		
NORMAL PRESSURE (ksf)	0.72	2.88		
SHEAR STRENGTH (ksf)	0.91	2.38		
INITIAL WATER CONTENT (%)	14.4	14.3		
FINAL WATER CONTENT (%)	18.4	18.4		
DRY DENSITY (pcf)	112.1	112.1		

NOTE: $\phi = 34.5^\circ$ $C' = 0.41$ ksf

611-2 Rev. 2/69

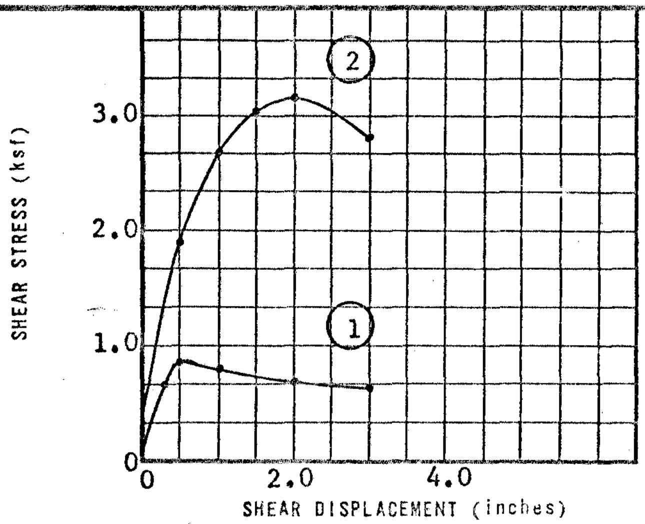
SOIL MECHANICS
and FOUNDATION
ENGINEERS

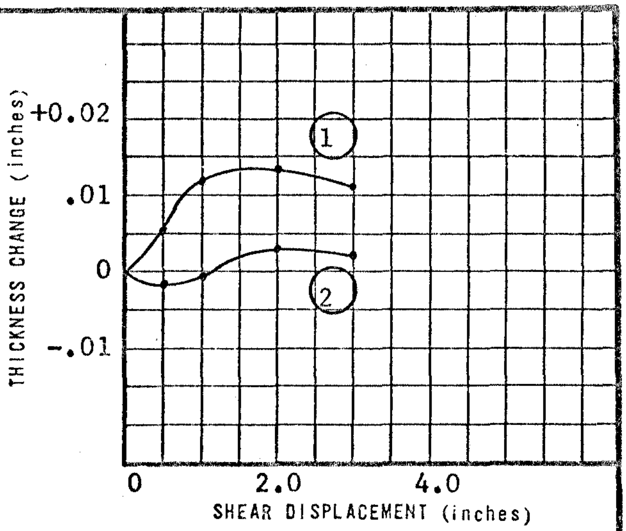
LOS GATOS CREEK CHANNEL

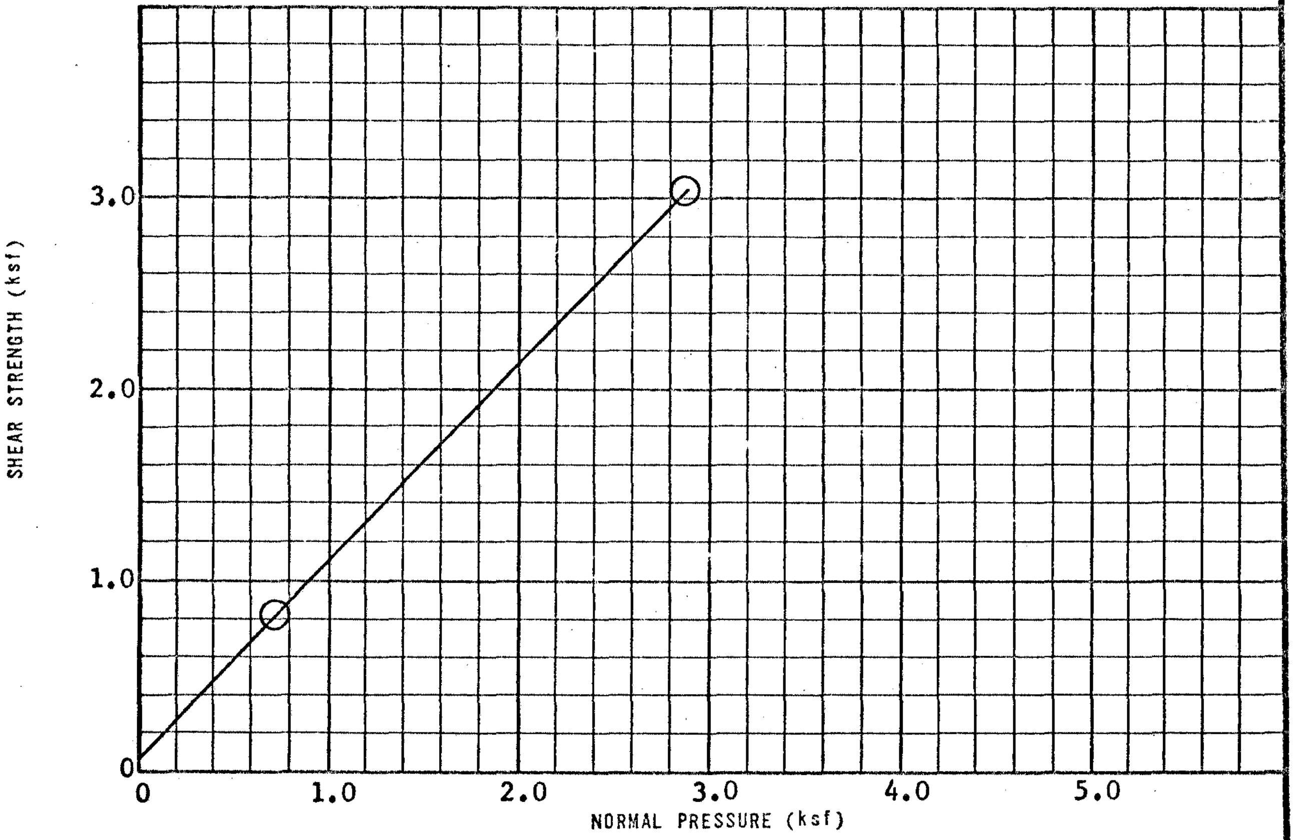
PALO ALTO • NEWPORT BEACH • CALIF.

DIRECT SHEAR TEST

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-4C







HOLE NO. T-2 B-1

DEPTH (ft) 17.0-20.0

SAMPLE DESCRIPTION Brown, gravelly SAND (SM-SP)

TEST DESIGNATION Consolidated-drained

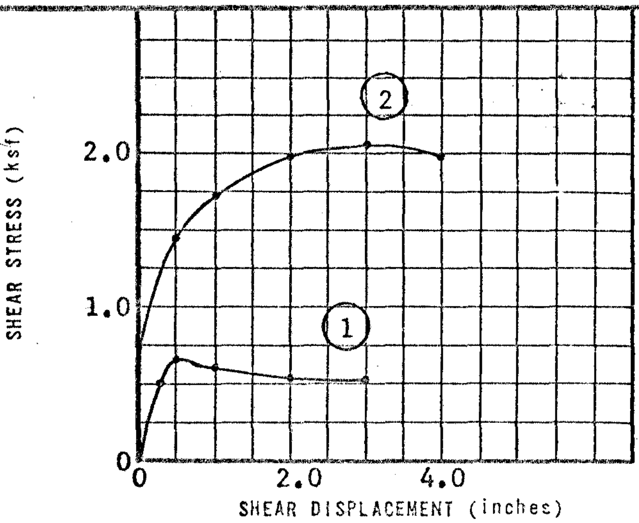
RATE OF STRAIN 0.10 in/min.

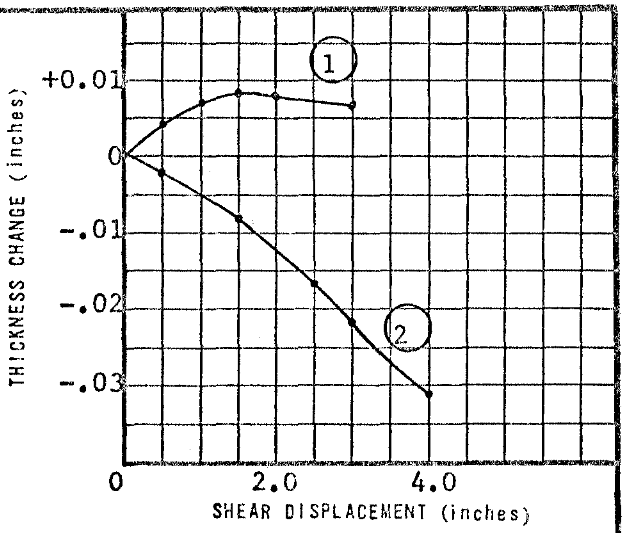
SPECIMEN NUMBER	1	2		
NORMAL PRESSURE (ksf)	0.72	2.88		
SHEAR STRENGTH (ksf)	0.82	3.05		
INITIAL WATER CONTENT (%)	9.3	9.6		
FINAL WATER CONTENT (%)	19.6	19.5		
DRY DENSITY (pcf)	110.0	109.7		

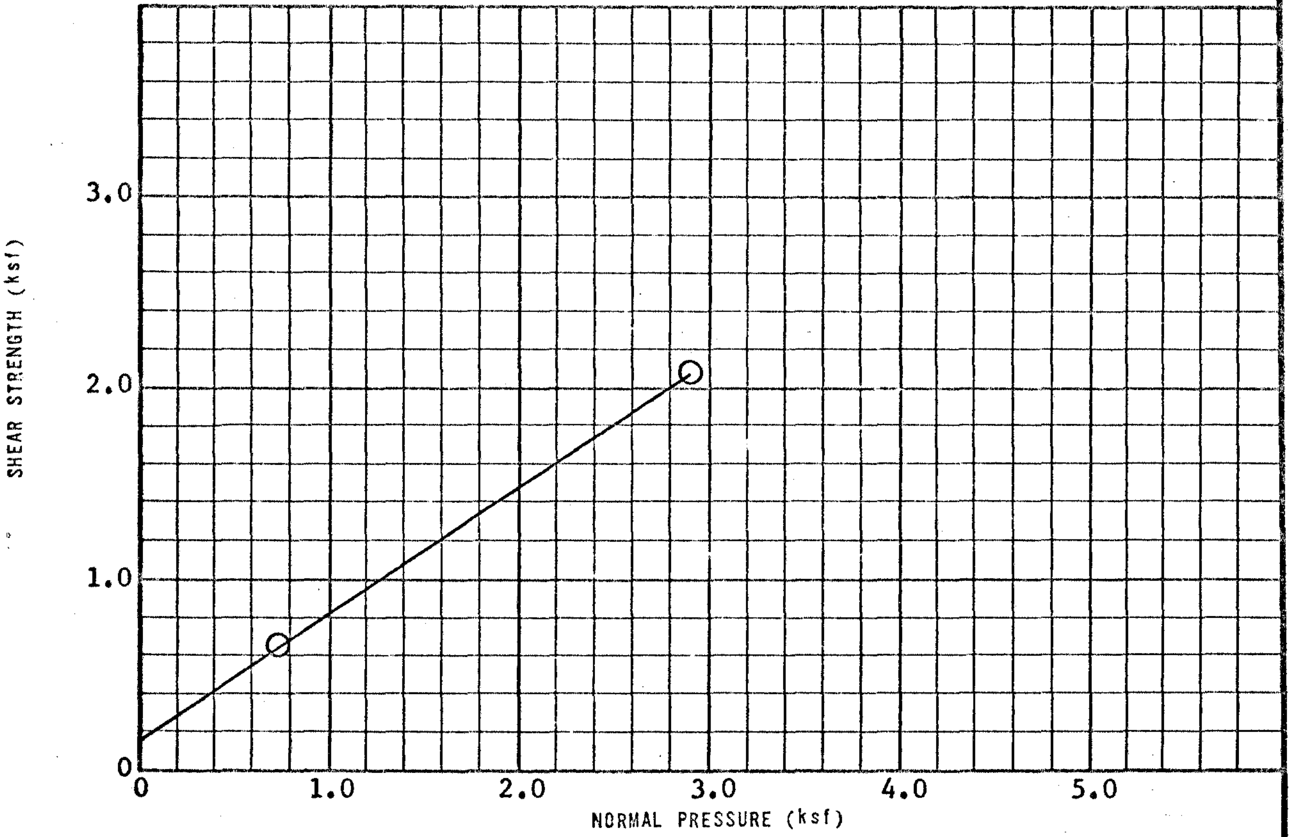
NOTE: $\phi = 46.0°$ $C' = 0.10$ ksf

611-2 Rev. 2/69

SOIL MECHANICS and FOUNDATION ENGINEERS Inc.	LOS GATOS CREEK CHANNEL PALO ALTO • NEWPORT BEACH • CALIF.	DIRECT SHEAR TEST		
		PROJECT NO. 0546	DATE OCTOBER 1970	DRAWING NO. B-4D







HOLE NO. T-5 B-1

DEPTH (ft) 11.0-12.0

SAMPLE DESCRIPTION Brown, silty SAND (SM-SC)

TEST DESIGNATION Consolidated-drained

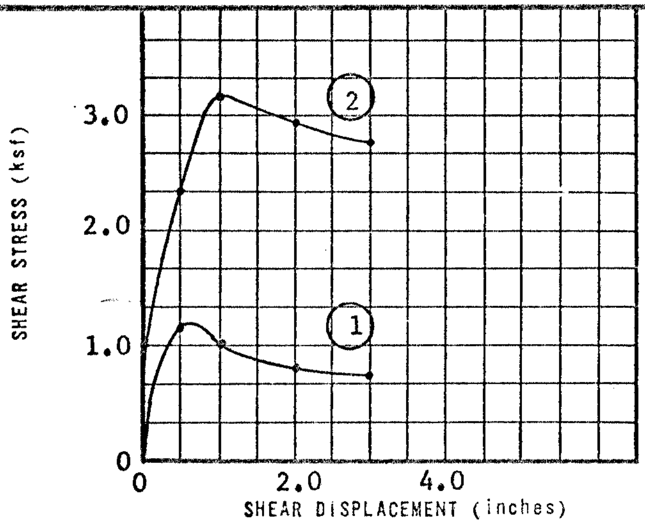
RATE OF STRAIN 0.10 in/min.

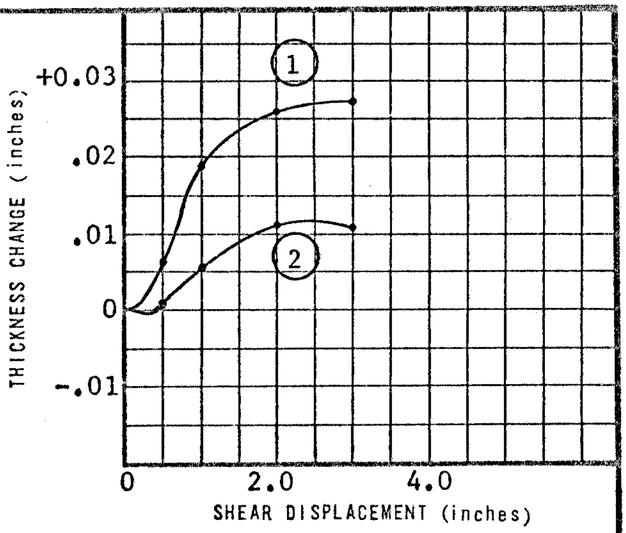
SPECIMEN NUMBER	1	2		
NORMAL PRESSURE (ksf)	0.72	2.88		
SHEAR STRENGTH (ksf)	0.65	2.07		
INITIAL WATER CONTENT (%)	11.7	11.8		
FINAL WATER CONTENT (%)	22.2	21.6		
DRY DENSITY (pcf)	100.6	100.6		

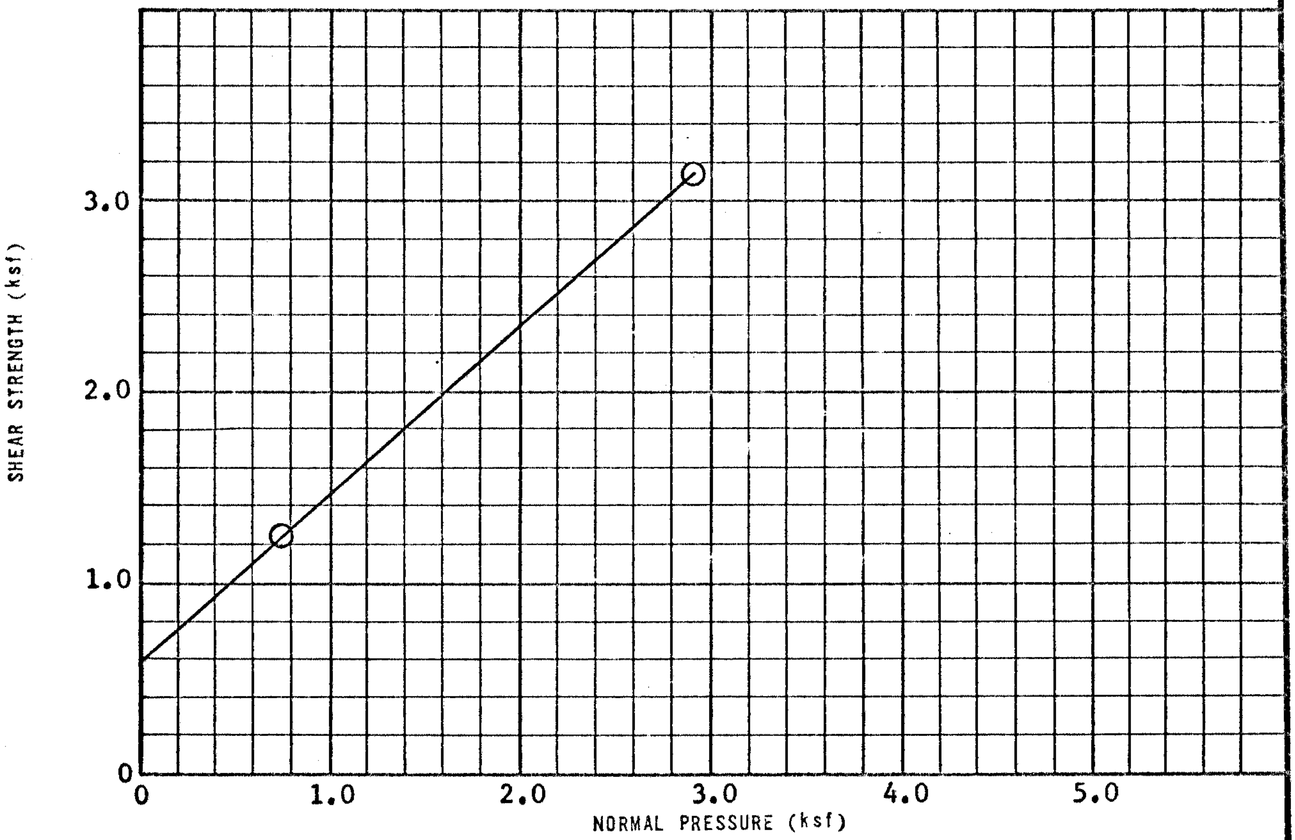
NOTE: $\phi = 33.5^\circ$ $C' = 0.18$ ksf

SOIL MECHANICS and FOUNDATION ENGINEERS	LOS GATOS CREEK CHANNEL	DIRECT SHEAR TEST
	PALO ALTO • NEWPORT BEACH • CALIF.	

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-4E







HOLE NO. T-5 B-3
DEPTH (ft) 21.0-23.0
SAMPLE DESCRIPTION Gray, gravelly SAND (SP)
TEST DESIGNATION Consolidated-drained
RATE OF STRAIN 0.10 in/min.

SPECIMEN NUMBER	1	2		
NORMAL PRESSURE (ksf)	0.72	2.88		
SHEAR STRENGTH (ksf)	1.23	3.14		
INITIAL WATER CONTENT (%)	7.3	7.3		
FINAL WATER CONTENT (%)	19.7	19.7		
DRY DENSITY (pcf)	110.8	110.8		

NOTE: ϕ = 41.5° C' = 0.58 ksf

611-2 Rev. 2/69

SOIL MECHANICS and FOUNDATION ENGINEERS

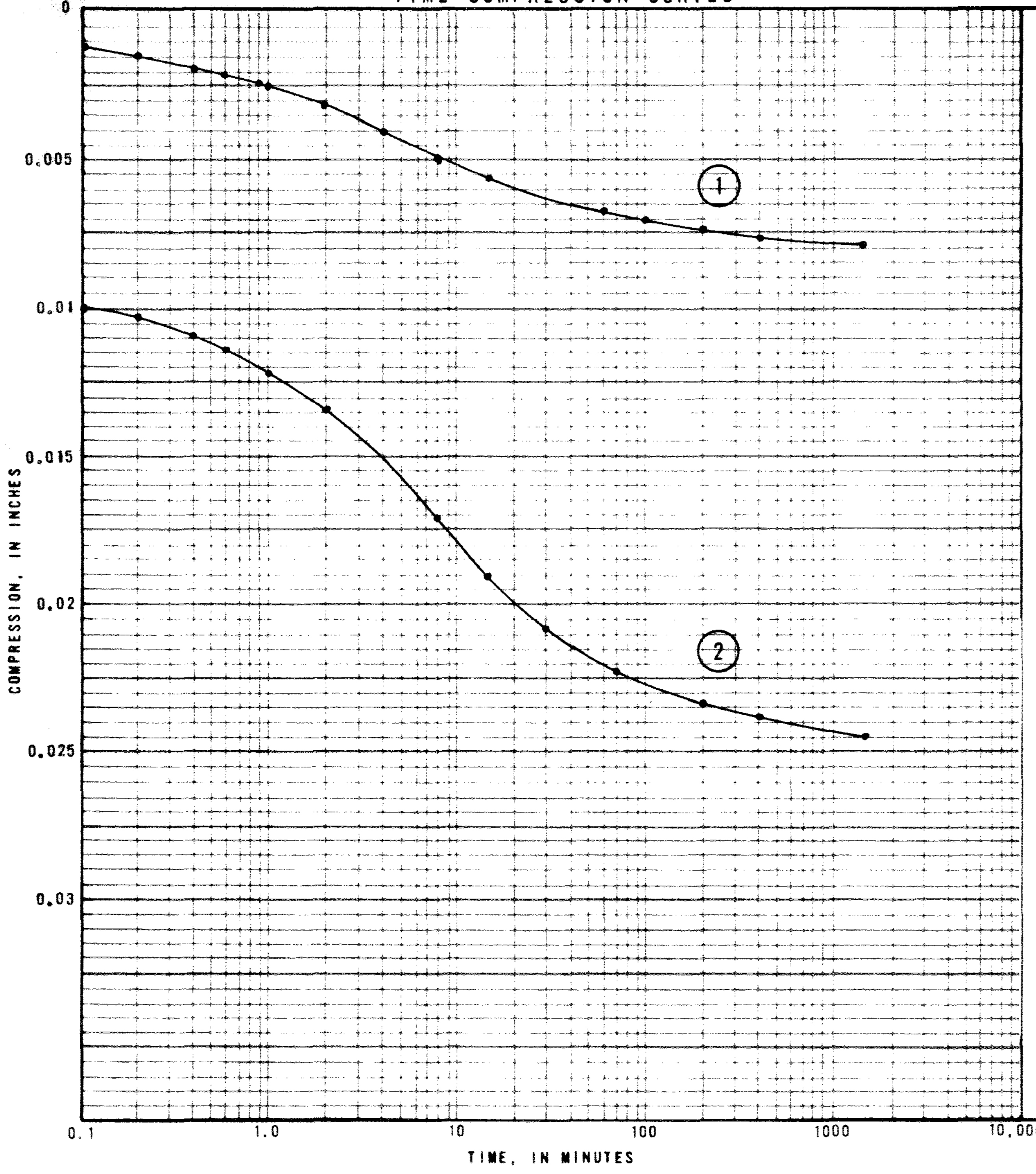
LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

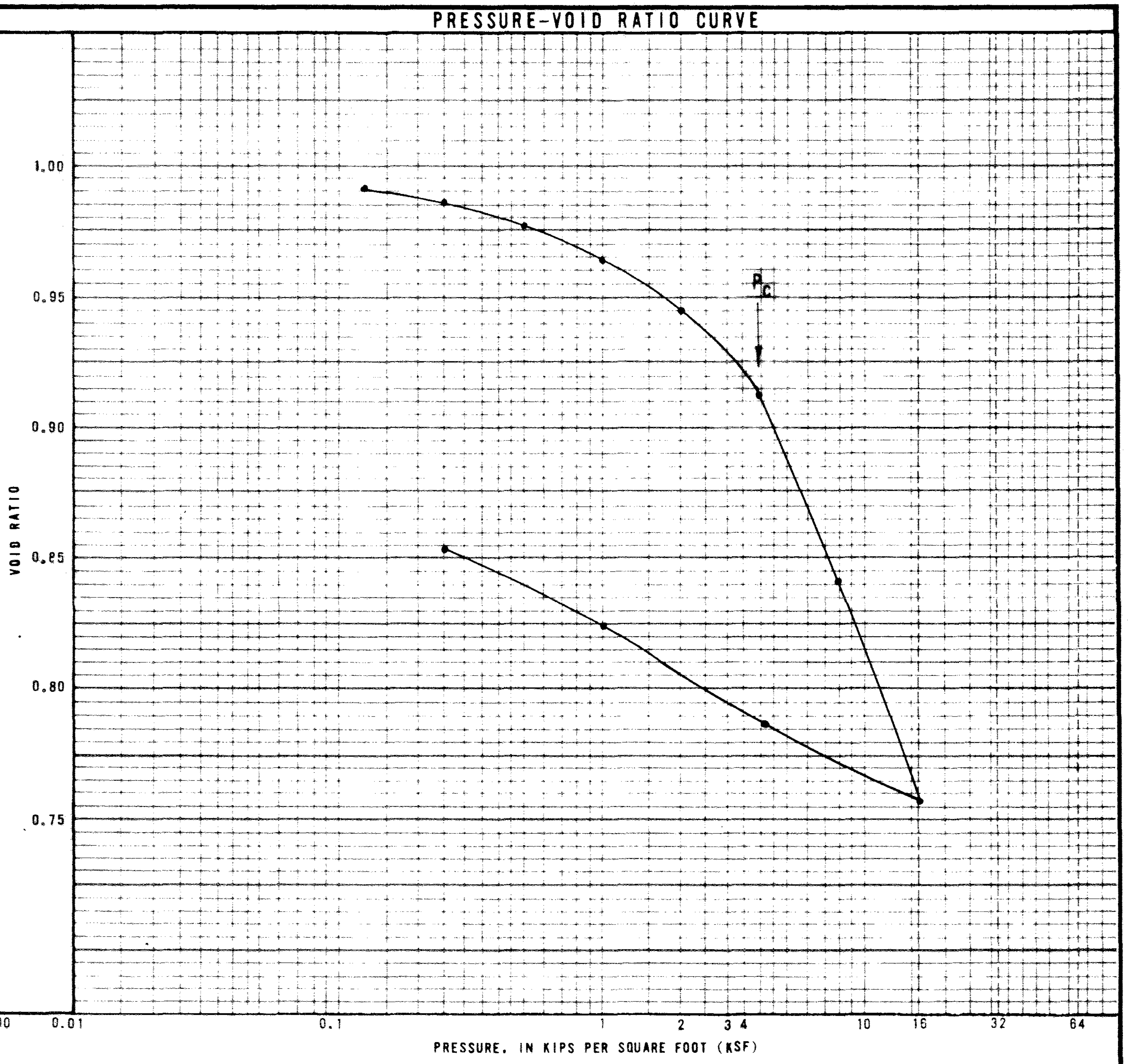
DIRECT SHEAR TEST

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	B-4F

TIME-COMPRESSION CURVES



PRESSURE-VOID RATIO CURVE



PRESSURE INCREMENTS OF TIME-COMPRESSION CURVES

CURVE NO.	PRESSURE INCREMENT FROM (KSF)	PRESSURE INCREMENT TO (KSF)
1	1000	2000
2	2000	4000

DESCRIPTION OF SPECIMEN: Dark gray, moderately plastic CLAY (CL)

HOLE NO. DH-7

DEPTH (ft) 25-27.5

ATTERBERG LIMIT SPECIMEN

STRATUM DESIGNATION	
LIQUID LIMIT (LL)	46
PLASTIC LIMIT (PL)	23
PLASTICITY INDEX (PI)	23
NATURAL WATER CONTENT % (w)	36.02
LIQUIDITY INDEX = $\frac{w-PL}{LL-PL}$	---
SPECIFIC GRAVITY (G)	2.75(est)

CONSOLIDATION SPECIMEN

INITIAL DRY DENSITY (pcf)	86.05
FINAL DRY DENSITY (pcf)	92.65
DIAMETER OF SPECIMEN (inches)	2.875
INITIAL THICK.OF SPEC. (inches)	1.00
INITIAL WATER CONTENT %	36.02
FINAL WATER CONTENT %	33.12
INITIAL DEGREE SATURATION %	99.65
FINAL DEGREE SATURATION %	100.0

INITIAL VOID RATIO (e_o) ——— ——— ———	0.996
FINAL VOID RATIO (e_f) — — — — — — — —	0.853
MOST PROBABLE PRECONSOL.STRESS (Ksf) SYMBOL P_c↓	3.8
EXISTING OVERBURDEN STRESS (Ksf) SYMBOL P_o↓	2.8

COMPRESSION INDEX (C_c)	0.28
SWELLING INDEX (C_s), REBOUND FROM	0.056
COEFFICIENT OF CONSOL. (C_v) cm^2/sec.	0.028
RECOMPRESSION INDEX (C_r)	0.056

SOIL MECHANICS and FOUNDATION ENGINEERS

PALO ALTO · NEWPORT BEACH · CALIF

LOS GATOS CREEK CHANNEL

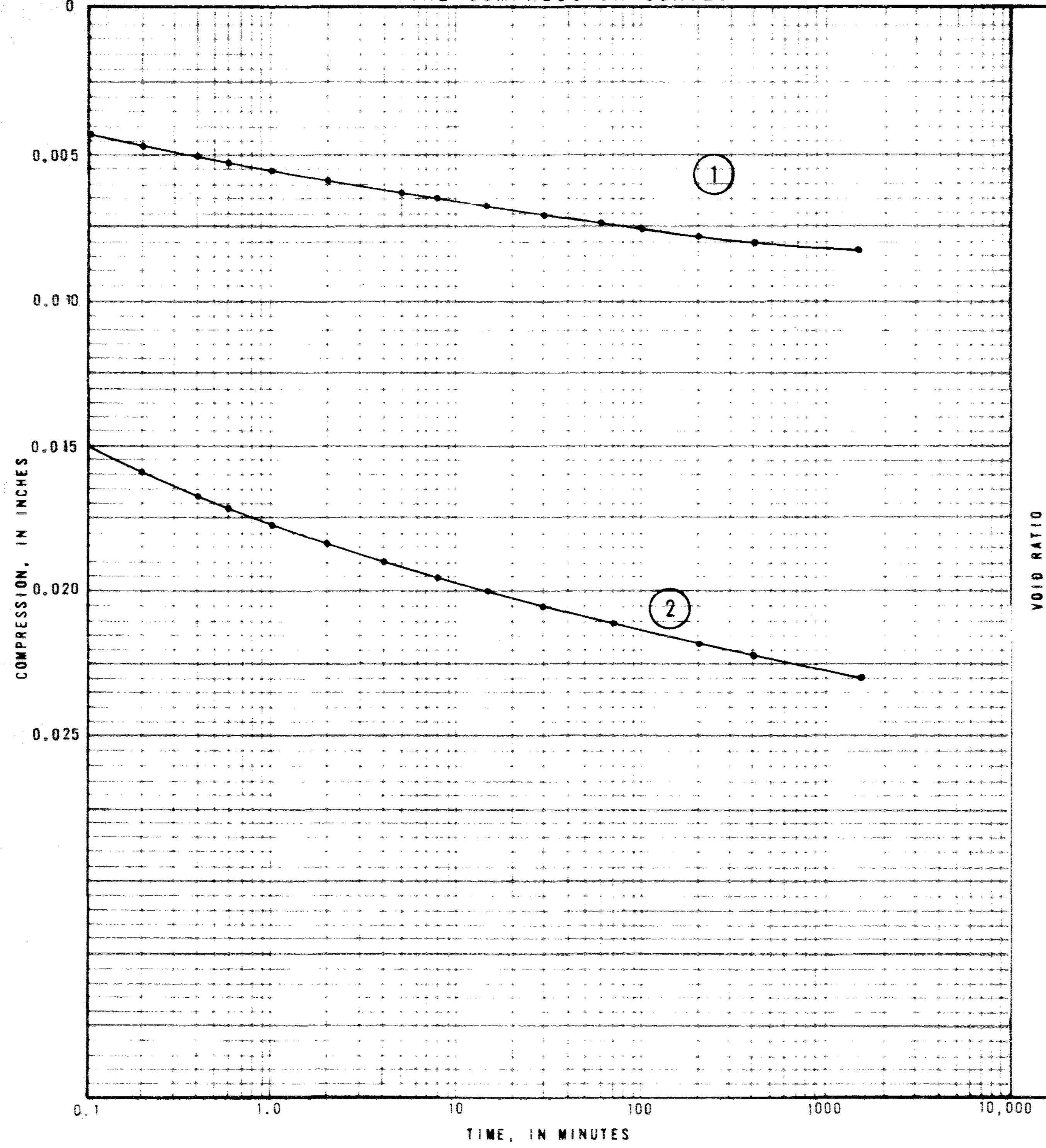
CONSOLIDATION TEST

PROJECT NO	DATE	DRAWING NO
0546	OCTOBER 1970	B-5A

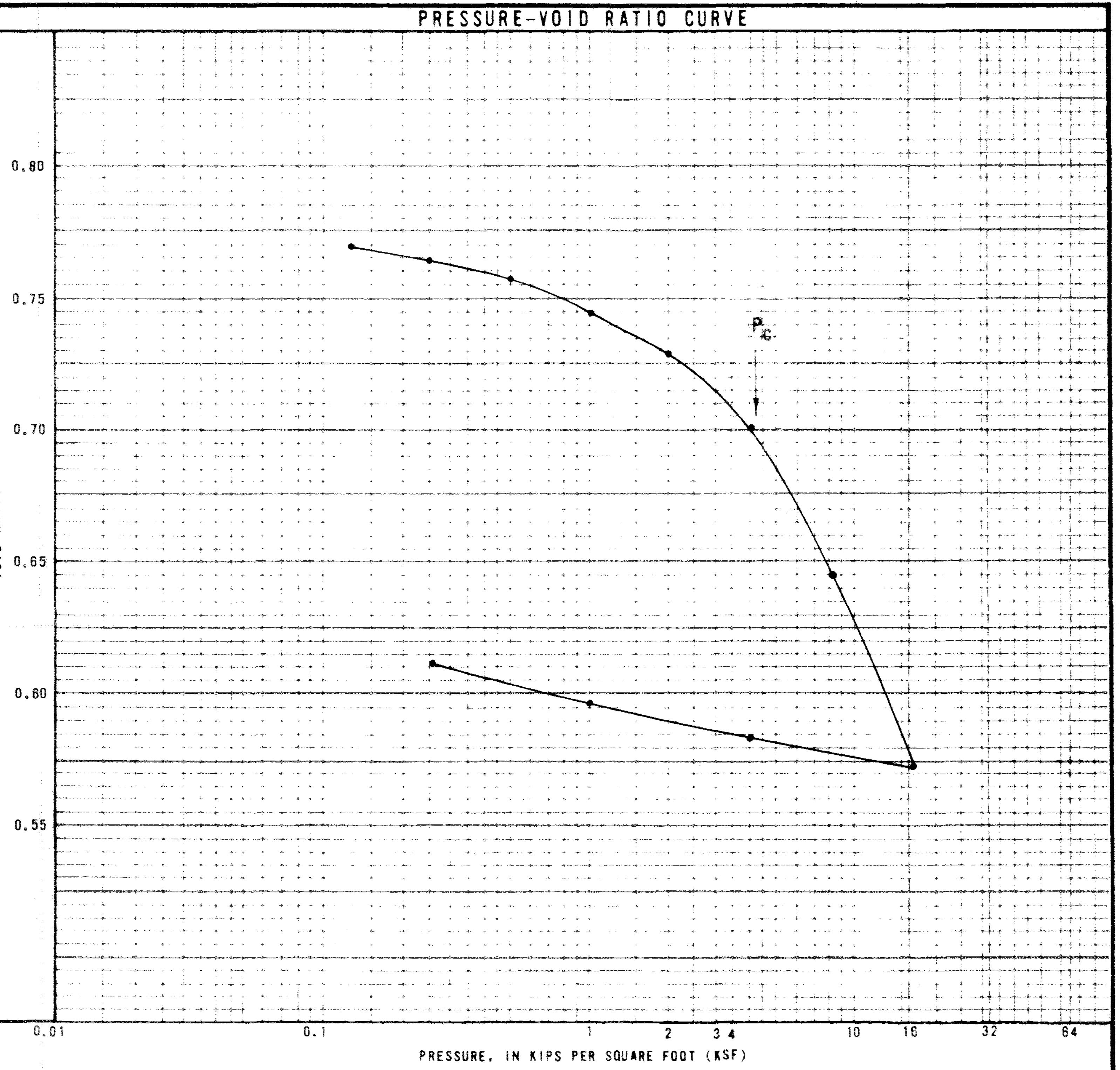
SAMPLE NO. S-2

853A

TIME-COMPRESSION CURVES



PRESSURE-VOID RATIO CURVE



PRESSURE INCREMENTS OF TIME-COMPRESSION CURVES

CURVE NO.	PRESSURE INCREMENT FROM (KSF)	PRESSURE INCREMENT TO (KSF)
1	1000	2000
2	2000	4000

DESCRIPTION OF SPECIMEN Brown, silty CLAY (CL)

HOLE NO. DH-3

DEPTH (ft) 25-26.5

ATTERBERG LIMIT SPECIMEN

STRATUM DESIGNATION	
LIQUID LIMIT (LL)	---
PLASTIC LIMIT (PL)	---
PLASTICITY INDEX (PI)	---
NATURAL WATER CONTENT % (w)	---
LIQUIDITY INDEX = $\frac{w-PL}{LL-PL}$	---
SPECIFIC GRAVITY (G)	2.75(est)

CONSOLIDATION SPECIMEN

INITIAL DRY DENSITY (pcf)	96.55
FINAL DRY DENSITY (pcf)	106.61
DIAMETER OF SPECIMEN (inches)	2.875
INITIAL THICK. OF SPEC. (inches)	1.00
INITIAL WATER CONTENT %	25.88
FINAL WATER CONTENT %	22.71
INITIAL DEGREE SATURATION %	91.6
FINAL DEGREE SATURATION %	100.0

INITIAL VOID RATIO (e_o)	0.777
FINAL VOID RATIO (e_f)	0.610
MOST PROBABLE PRECONSOL. STRESS (Ksf) SYMBOL P_c↓	4.0
EXISTING OVERBURDEN STRESS (Ksf) SYMBOL P_o↓	2.8

COMPRESSION INDEX (C_c)	0.22
SWELLING INDEX (C_s), REBOUND FROM	0.022
COEFFICIENT OF CONSOL. (C_v) $cm^2/sec.$	---
RECOMPRESSION INDEX (C_r)	0.022

SOIL MECHANICS and FOUNDATION ENGINEERS

LOS GATOS CREEK CHANNEL

PALO ALTO · NEWPORT BEACH · CALIF

CONSOLIDATION TEST

PROJECT NO	DATE	DRAWING NO
0546	OCTOBER 1970	B-5B

SAMPLE NO. S-3

853A

PLAN

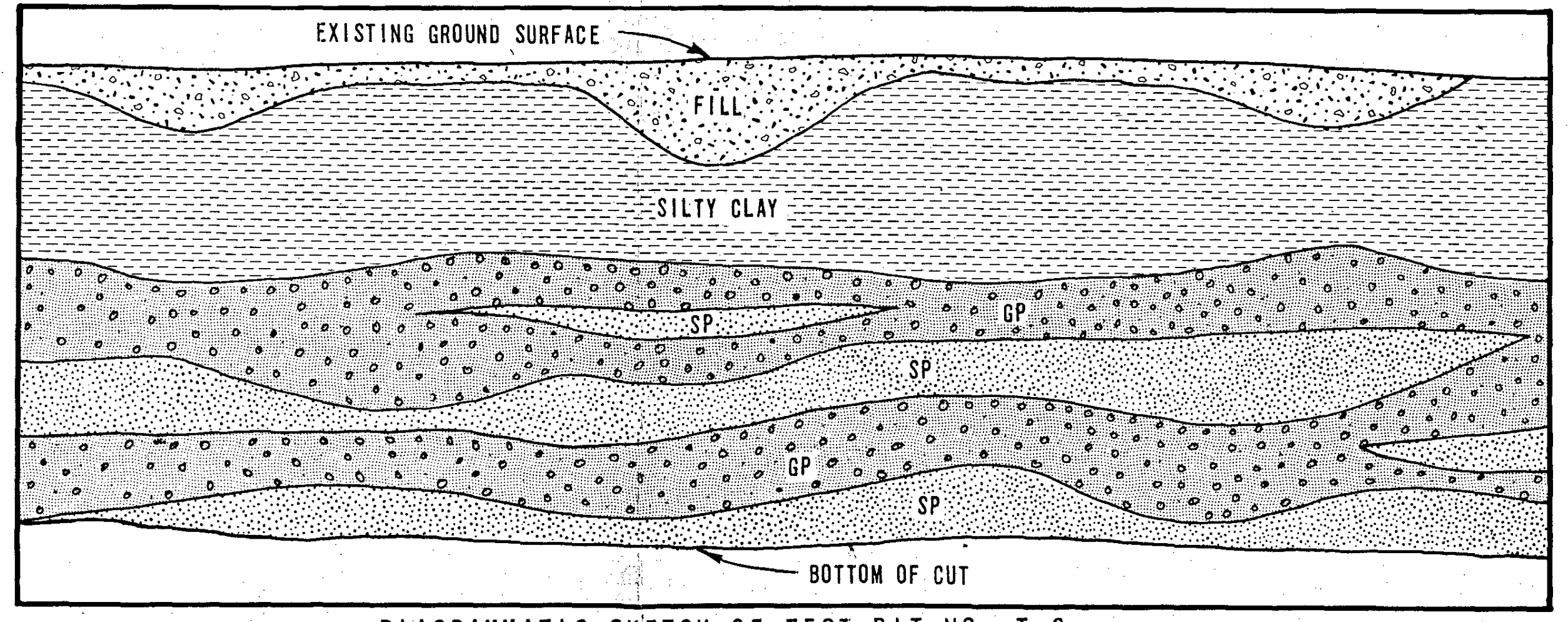
SECTION

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 5'

NOTE: BECAUSE OF THE DIFFERENCE IN HORIZONTAL AND VERTICAL SCALE, THERE IS A DISTORTION OF THE SPATIAL RELATIONSHIPS SHOWN ON THIS DRAWING.

THE GEOLOGIC CONDITIONS AND INTERPRETIVE GEOLOGY SHOWN ON THIS DRAWING ARE BASED UPON SUBJECTIVE JUDGEMENT AND INTERPRETATION OF FEATURES OBSERVABLE DURING THE FIELD INVESTIGATION. REASONABLE CONTINUITY BETWEEN SURFACE OBSERVATIONS AND SUBSURFACE DATA WAS ASSUMED ON THE BASIS OF GENERAL GEOLOGIC CHARACTERISTICS AND IS SUGGESTIVE ONLY. OUR WORK WAS DONE FOR PLANNING OR DESIGN PURPOSES ONLY AND IS NOT WARRANTED FOR OTHER PURPOSES. IF CONDITIONS DIFFERING SUBSTANTIALLY FROM THOSE SHOWN ARE ENCOUNTERED. W. A. WAHLER & ASSOCIATES SHALL BE NOTIFIED.

BASE CREDIT: SANTA CLARA COUNTY FLOOD CONTROL
AND WATER DISTRICT DRAWINGS FROM AERIAL
PHOTOGRAPHY OF 9-3-69.



DIAGRAMMATIC SKETCH OF TEST PIT NO. T-3

THIS CROSS SECTION EXTENDS PARALLEL TO LOS GATOS CREEK AND DEPICTS THE SOIL PROFILE EXPOSED IN A CONSTRUCTION CUT SLOPE FOR THE MONTGOMERY STREET BOX CULVERT.

KEY

— — — CONTACT BETWEEN MATERIAL TYPE ZONES, APPROXIMATE AND BASED UPON INTERPRETATION OF AVAILABLE DATA.

ZONE		
	I	FILL: CONSISTS OF GRAVEL, SAND AND CLAY WITH VARYING AMOUNTS OF MIXED CONCRETE BLOCKS, GLASS, ASPHALT AND WOOD. GENERALLY LOOSE, THICKNESS VARIES (2 TO 14 FEET), THICKER TOWARDS CREEK.
	II	UPPER FINE GRAINED SOIL: SILTY CLAY TO SILTY SAND. THICKNESS VARIES FROM 0 TO 12 FEET.
	III	UPPER COARSE GRAINED SOIL: INTERLAYERED SAND AND GRAVEL LENSES. LITTLE TO NO FINES. YELLOWISH BROWN, GENERALLY DENSE. THIS ZONE IS APPROXIMATELY PARALLEL LEVEL WITH THE PRESENT STREAM CHANNEL. VARIES IN THICKNESS FROM 3 TO 12 FEET.
	IV	LOWER FINE GRAINED SOIL: ALTERNATING LAYERS OF SILTY SAND, SILTY CLAY AND HIGHLY PLASTIC DARK GRAY, CLAY; FIRM TO STIFF IN CONSISTENCY, SOMETIMES SOFT. THICKNESS VARIES FROM 9 TO 25 FEET.
	V	LOWER COARSE GRAINED SOIL: INTERLAYERED SAND AND GRAVEL LAYERS, DENSE. THICKNESS UNDETERMINED AS NOT PENETRATED BY DRILL HOLES.

W. A. WAHLER
& ASSOCIATES

LOS GATOS CREEK CHANNEL

PALO ALTO • NEWPORT BEACH • CALIF.

SITE PLAN & CROSS SECTION

PROJECT NO.	DATE	DRAWING NO.
0546	OCTOBER 1970	FIGURE 1